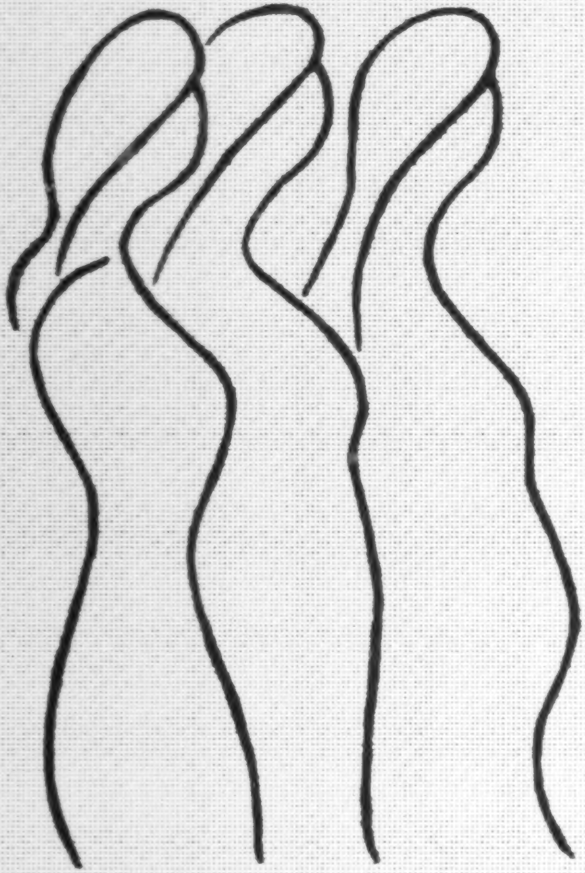

Alberta Reproductive Health: Pregnancy Outcomes

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Executive Summary

This report follows the December 1999 Alberta Reproductive Health: Pregnancy Outcomes report. The December 1999 report was based on data for 1985 to 1998. The current report is based on the most recent available Alberta data, which includes data up to the end of 1998 or 1999, depending on the source. New to the report are congenital anomalies data, expanded information on high birth weight rates, maternal risk factors data, prenatal class attendance rates, breastfeeding initiation rates, epidural analgesia rates, and causes of death information. Spontaneous abortion data appear in this report after a year's absence.

Data sources for this report include: Vital Statistics, Alberta Health and Wellness Administrative databases, Statistics Canada publications, Health Canada publications, hospital statistics reported to the Alberta Medical Association (AMA) Committee on Reproductive Care, case information, and the offices of the medical examiners. Information on live births, stillbirths, spontaneous abortions, induced abortions, procedures related to delivery, breastfeeding initiation, congenital anomalies, and perinatal, neonatal, infant, and maternal mortality is provided. Wherever possible and appropriate, data are broken down for regional health authority, age groups, time trends, and risk factors. "Residence RHA" refers to the regional health authority in which the mother resided at the time of the relevant event, and "Facility RHA" refers to the regional health authority where the relevant event occurred.

Overview

This report is produced with the goal of providing quality information of a timely nature to all parties for whom knowledge of trends in the reproductive health of Albertans is valuable. There are now fifteen years of data included in the report, and the reproductive health of Albertans has undergone profound changes during that period. Fertility rates have decreased strikingly. Average maternal age has increased. Low birth weight and pre-term births have become more common. High birth weight births and multiple births have also increased in frequency. Induced abortion rates have increased. Induction of labour has become much more widespread, and epidural analgesia in labour rates have increased in most regions. Infant death rates have decreased noticeably.

Fertility rates are declining for women under 30 years, and increasing for women aged 30-44 years. From 1996 to 1999, women aged 30-34 had higher fertility rates than women aged 20-24. The implications of delayed childbearing are widespread, with the health of both mothers and children of concern. Older mothers tend to have a higher risk of complications during pregnancy and delivery. Births to older mothers are also associated with poorer outcomes, including congenital anomalies, pre-term births, and low birth weight births.

The rate of all congenital anomalies combined was at a fifteen-year low in 1999, though trends vary with different anomalies. Congenital anomalies are more common in mothers over 35.

Low birth weight rates increased from 1995 to 1998, and fell to a five-year low in 1999. Alberta's pre-term birth rate has increased over the last several years, reaching the fifteen-year high in 1999. Because prematurity and low birth weight are associated with increased perinatal and neonatal mortality and childhood morbidity, pre-term and low birth weight rates are of critical concern to the health system. Part of the increase in pre-term and low birth weight births can be attributed to increasing maternal age, and also to the use of in-vitro fertilization (IVF) techniques. IVF contributes to higher multiple birth rates as well. The multiple birth rate in Alberta has risen since 1996 and was at a fifteen-year high in 1999. High birth weight rates continue to increase, reaching the fifteen-year high in 1999.

Maternal smoking occurred in 26.4% of pregnancies resulting in live births between 1997 and 1999. One-third of mothers attended prenatal classes between 1997 and 1999. Approximately 83% of mothers initiated breastfeeding in 1998.

Induced abortions rates declined somewhat in 1999, after peaking in 1997 and 1998.

Labour was induced in approximately one-quarter of deliveries in 1999; labour induction is an increasing trend. Epidural analgesia use has risen noticeably; epidural analgesia was used in 27.5% of deliveries in 1998, though the rate varied widely with region and hospital. Cesarean section rates have increased slightly in recent years.

The infant mortality rate remains low, though it was higher in 1999 than the fifteen-year low reached in 1997. Neonatal and post-neonatal mortality rates also remain low. Perinatal mortality rates do not show systematic time trends.

Fertility

- **General fertility rate** (number of live births per 1,000 women aged 15-49) continued a fifteen-year decline, with a 27.8% drop between 1985 and 1999, from 66.1 to 47.7.
- The **estimated pregnancy rate** (per 1,000 women aged 15-49, including live births, stillbirths, spontaneous abortions, and induced abortions) has dropped correspondingly. The 1999 rate was 66.7, the fifteen-year low. The fifteen-year high of 79.8 occurred in 1986.
- **Average maternal age** at delivery has changed minimally over the last few years after a decade of steady increase. The average age of mothers at delivery was 28.2 years in 1999, which is 1.7 years higher than the fifteen-year low of 26.5 years, occurring in 1985.

Birth Outcomes

- The **spontaneous abortion rate** (per 100 estimated pregnancies) has declined since 1995, after peaking from 1991 to 1994. The 1999 rate was 8.7.
- The number of **live births** has consistently decreased, from 43,327 in 1985 to 37,797 in 1999.
- The number of **stillbirths** has remained relatively constant for the last fifteen years, usually within the range of 250 to 300 per year. In 1998, there were only 191 stillbirths (as registered by Vital Statistics), which was the fifteen-year low. There were 267 stillbirths in 1999.
- The rate of **congenital anomalies** shows a decreasing trend over the last 15 years. The rate for all congenital anomalies combined (per 1,000 total births) was 31.1 in 1999, the fifteen-year low. The fifteen-year high was 48.5, in 1990.
- The **low birth weight** rate (live births less than 2,500 grams, per 100 live births) is at a five year low, with a 1999 rate of 5.9. This compares with the fifteen-year low of 5.4 in 1985.
  - The low birth weight rate varies with residence RHA. For 1997 to 1999 combined, the low birth weight rate in RHA 4 exceeded the provincial average, while RHAs 1, 5, 11, 12 and 13 had low birth weight rates which were lower than the provincial average.
- The **small for gestational age** (birth weight below the 10th percentile of appropriate for gestational age infants) rate for singleton live births dropped to 8.1 per 100 singleton live births in 1999, compared to the fifteen-year high of 11.1 in 1985.
- The **large for gestational age** (birth weight above the 90th percentile of appropriate for gestational age infants) rate for singleton live births increased to 11.9 per 100 singleton live births in 1999, from the low of 9.7 (occurring in 1985 and 1989).
- The **high birth weight** rate (live births $\geq$ 4000 grams, per 100 live births) has risen. The 1999 rate was 12.6, which is the fifteen-year high. The rate was at its lowest in the late 1980's, with a low of 10.7 in 1988.
- The rate of **pre-term** births (live births with gestation periods of 37 weeks or less, per 100 live births) has continued to increase. The rate ranged between 6.3 and 6.9 from 1985 to 1994, and has been over 7.0 since 1995. The 1999 rate was 7.8, which is a fifteen-year high.
- The **multiple birth** rate (per 100 live births) of 2.7 for 1999 is a fifteen-year high. The lowest rate during the fifteen-year study period was 1.9 in 1986.

Maternal Behaviours

- **Maternal smoking** occurred during pregnancy for 26.4% of live births for 1997 to 1999 combined. The **alcohol consumption rate during pregnancy** was 4.6%, and **the street drug use during pregnancy** rate was 1.5%. These risk factors were associated with higher low birth weight and pre-term birth rates.
- **Prenatal classes** were attended by 33.2% of mothers giving birth to a live infant from 1997 to 1999. Attendance at prenatal classes was associated with lower low birth weight and pre-term birth rates.

- In 1998, the provincial **breastfeeding initiation rate** was 85.3 (per 100 women delivering).
- Breastfeeding initiation rates vary considerably across facility RHAs.

Reproductive Care Services

- The **induced abortion** rate (per 1,000 women aged 15-49) has fluctuated over the last fifteen years, but has increased overall. The 1999 rate was 12.8.
- The **total labour induction** rate (per 100 hospital deliveries) has increased over the period studied. In 1985, 12.6% of deliveries were induced; by 1999, the rate had doubled to 25.3%.
- **Epidural analgesia** use in labour and delivery has increased from 1994 to 1998 in most RHAs. The overall rate (per 100 deliveries) increased from 14.0 in 1994 to 27.5 in 1998.
- After peaking in 1987 and 1988, the **cesarean section** rate declined into the mid-1990's. Since 1996, the rate has been increasing and was 19.1 (per 100 hospital deliveries) in 1999.
- The use of **forceps** has declined from 14.6 (per 100 hospital deliveries) in 1985, to 6.5 in 1999; the use of **vacuum extraction** has concurrently shown an increase, from 0.3 in 1985 to 11.0 in 1999.
- In 1998, **breech deliveries** occurred by cesarean section 62.1% of the time; 37.9% were vaginal deliveries. Breech delivery occurred in 25.5% of stillbirths and 25.8% of neonatal deaths.

Mortality

- See Appendix 1 for mortality definitions used in this report.
- The **perinatal** mortality rate in 1998 was 8.1 (per 1,000 total births). This rate shows no systematic time trend over the fifteen-year study period.
  - The stillbirth rate for births 500 grams and higher was 3.2 in 1998.
  - The perinatal mortality rate for births 500 grams and higher was 5.2 in 1998.
- Both **neonatal** and **post-neonatal** mortality rates have declined over the last fifteen years.
  - The 1998 neonatal mortality rate was 3.5.
  - The 1998 post-neonatal mortality rate was 2.0.
- The **infant death** rate (per 1,000 live births) has declined substantially in the last four years. It reached a fifteen-year low in 1997, with a rate of 4.9. The rate was 5.4 in 1998, and the 1999 rate was 5.8.
  - Infant mortality rates for residence RHAs for 1997 to 1999 combined show that RHA 4 had a lower rate than the provincial average.
- In 1998, there were 3 **maternal deaths**, one directly related to pregnancy.
- The leading **causes of death** in 1998 for **stillbirths** weighing 500 grams or more were unexplained (21.3%), and congenital anomalies (20.5%).
- The leading **causes of death** in 1998 for **neonatal deaths** were congenital malformation (48.0%) and prematurity (20.6%).
- **Wiggelsworth classification** of perinatal and neonatal deaths is provided for 1998. 29% of deaths occurred before the start of labour, 32% involved lethal or potentially lethal malformations, 22% were associated with prematurity, 4% fell into the group "Intrapartum Deaths, Neonatal deaths <4 hours old, Neonatal deaths >1000 grams and >4 hours old with evidence of cerebral birth trauma/asphyxia", and 14% of deaths had a defined specific condition.

For further information on any aspect of the report, please contact the Health Surveillance Branch of Alberta Health and Wellness, or the Alberta Medical Association Committee on Reproductive Care.

Introduction

This document represents continued collaboration between Alberta Health and Wellness and the Alberta Medical Association in reporting on the reproductive health of Albertans.

Data consist of pregnancy outcomes for the calendar years 1985 to 1998 or 1999, including:

- spontaneous abortions
- live births and stillbirths
- congenital anomalies
- low birth weight and high birth weight
- birth weight in relation to gestational age
- pre-term births
- multiple pregnancies and births
- maternal smoking, alcohol consumption, and street drug use
- prenatal class attendance
- breastfeeding initiation
- induced abortions
- operative deliveries and induction of labour
- epidurals in labour
- perinatal, neonatal, and infant mortality
- maternal mortality
- causes of death

Data are for Alberta residents unless otherwise stated. Regional data (by regional health authorities) are provided where appropriate. Some data are broken down by relevant factors such as maternal age or birth weight groupings. National comparisons are made where possible. At the time of preparation of this document, national data were available for most measures only to the end of 1997.

Data sources

- Vital Statistics Birth Registration files, Department of Government Services
- Vital Statistics Death Registration files, Department of Government Services
- Clinic Files, Alberta Health and Wellness
- Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness
- Fee-for-Service Claims Files, Alberta Health and Wellness
- Alberta Health Care Insurance Plan Stakeholder Registration File, Alberta Health and Wellness
- Medical records departments of hospitals in Alberta
- Perinatal, infant, and maternal death cases from hospitals in Alberta as well as the offices of the medical examiners
- Reports from follow-up clinics for neonates and infants
- Statistics Canada and Health Canada publications

Methodology and Limitations

- Statistical analyses are mainly descriptive, including frequencies, rates, percentages, means and medians. Regional differences are interpreted in terms of standard errors and confidence intervals.
  - With rare events (e.g., stillbirths) or detailed break-downs (e.g., live births by age group of mother, RHA, and year), rates may be based on small numbers, which reduces their statistical reliability. Caution should always be exercised in interpreting these rates.
  - Data are sometimes combined across three-year periods (e.g, 1997 to 1999) in order to increase reliability of rates.

  - In some cases, linear, quadratic, and cubic effects are described. Linear effects refer to a straight-line relationship between two variables (either an increasing or a decreasing trend). Quadratic and cubic effects are non-linear: The relationship between two variables in this case is captured by a second-order (quadratic) or third-order (cubic) polynomial. A quadratic function results in a curve with one change of direction, for example a decrease followed by an increase (a U-shaped curve). A cubic function results in a curve with two changes of direction, for example an increase, followed by a decrease, followed by a leveling-off.
  - Because of differences in definitions and dates of extracting data for analyses, the statistics in this report may not be exactly the same as those previously published by Alberta Health and Wellness.
- Birth statistics are derived from Vital Statistics Birth Registration Files. Registration of births in Alberta is a legal requirement, and the files are believed to be virtually complete. Births to non-Alberta residents occurring in Alberta have been excluded.
- Spontaneous abortion data come from Fee-For-Service Claims Files. Clinical spontaneous abortions that are treated by physicians are included in these data. Spontaneous abortions that are sub-clinical are not included in these data, nor are spontaneous abortions where patients did not contact a physician. For repeat spontaneous abortions, a two-month time lag between physician visits was used as the cutoff point for separate pregnancy events.
- Congenital anomalies data are from the Alberta Congenital Anomalies Surveillance System (ACASS). ICD-9CM (International Classification of Disease-9th Revision-Clinical Modification) codes used are detailed in Appendix 3. Note that maternal age data for congenital anomalies are derived by linkage with Vital Statistics databases. Stillbirths are not available for 1998 and 1999 in these databases, so maternal age rates are calculated relative to live births only. Time trends do not require data linkage, and thus are calculated relative to total births (live births + stillbirths). A detailed report for congenital anomalies in Alberta from 1980 to 1998 is forthcoming.
- Data on maternal smoking, alcohol consumption, street drug use, and prenatal class attendance for live births are derived from Notice of Live Birth and Stillbirth that are entered into the Vital Statistics Birth Registration Files. This information is not complete for all births; analyses include only those births for which the relevant information is available. Note that maternal behaviour data are self-reported, and thus likely underestimate of the true incidence of the behaviours.
- Breastfeeding initiation data come from the Medical Records departments of the hospitals and are available for 1996 to 1998.
- The Clinic Files contain information on induced abortions. Regional comparisons are provided from both facility and residence perspectives. However, because region of residence information is not available in the Clinic Files, it is extracted from Fee-for-Service Claims files and data may not correspond exactly due to data source differences. Abortions for non-Alberta residents have been excluded.
- Method of delivery and induction data are derived from the Hospital Morbidity Files. Rates are calculated based on hospital deliveries only; home deliveries are not included in total deliveries in this section. Because only primary, secondary, and tertiary ICD9-CM diagnostic and procedure codes were available from 1985 to 1992, the diagnostic and procedure criteria for all years were based on the first three codes only. Thus, the number of procedures (especially minor procedures) may be under-counted. Detailed criteria for data extraction are provided under relevant tables and in Appendix 3.
- Epidural use in labour and delivery data for 1998 come from Medical Records departments of the hospitals. In 1994, an Ad Hoc Committee of the AMA Health Issues Council, in collaboration with the Committee on Reproductive Care, produced a report on the use of epidural analgesia in labour and delivery in Alberta, and the data from that report are used to for comparison purposes.
- The AMA, through the Committee on Reproductive Care, reviews cases of perinatal, neonatal and maternal mortality. Case information is received from the medical records departments of Alberta Hospitals, hospital perinatal review committees, offices of medical

examiners, vital statistics, and physicians. The Committee is designated by Ministerial Order to provide this service. Collaboration and cooperation from medical records staff, hospital perinatal review committees and office of medical examiners help to ensure that case information is complete. Variables from case reviews are entered into a mortality database and form the basis for the mortality analysis part of this report. A validation process with vital statistics, Alberta Health and Wellness and medical records departments ensures that all cases are received for review. The mortality data include non-resident mothers who delivered in Alberta, but do not include babies born out-of-province who died in Alberta hospitals.

- Information on post-neonatal and infant deaths is derived from Vital Statistics Death Registration Files. Registration of deaths in Alberta is a legal requirement, and the files are believed to be virtually complete. Deaths to non-Alberta residents occurring in Alberta have been excluded.
- National comparison data are extracted from Statistics Canada and Health Canada publications on births, therapeutic abortions, deaths, and population.
- Populations used for the calculations of rates are derived from the Alberta Health Care Insurance Plan Registration Files. They are estimated at June 30, as viewed at December 31 of each year. Provincial rate calculations include those with an "unknown" RHA code.

Time Trends for Major Indicators of Reproductive Health

- The table below summarizes time trends for selected major indicators of reproductive health for the fifteen-year period from 1985 to 1999.
  - Included are 1999 rates, the lowest rate for the fifteen year period (with the year in which the lowest rate occurred in parentheses), the highest rate (year in parentheses), and the trend that applies over the fifteen-year period.

Time Trends for Major Indicators of Reproductive Health, Alberta, 1985 to 1999

Indicator	1999 Rate	Lowest rate (year)	Highest rate (year)	Trend
Crude Birth Rate (per 1,000 population)	12.9	12.9 (99)	18.5 (85)	Decreasing
General Fertility Rate (per 1,000 women aged 15-49)	47.7	47.7 (99)	66.1 (85)	Decreasing
Total Fertility Rate (per 1,000 women)	1,718	1,708 (97)	1,887 (85)	Decreasing
Mean Maternal Age at Delivery (years)	28.2	26.5 (85)	28.2 (99)	Increasing
Stillbirth Rate (per 1,000 total births)	7.0	5.1 (98)	7.3 (91)	No trend
Congenital Anomalies Rate (per 1,000 total births)	31.1	31.1(99)	48.5(90)	Decreasing
Low Birth Weight Rate (per 100 live births)	5.8	5.4 (85)	6.2 (97,98)	Increasing
High Birth Weight Rate (per 100 live births)	12.6	10.7 (88)	12.6 (99)	Increasing
Pre-Term Birth Rate (per 100 live births)	7.8	6.3 (86)	7.8 (99)	Increasing
Multiple Birth Rate (per 100 live births)	2.7	1.9 (86)	2.7 (99)	Increasing
Induced Abortion Rate (per 1,000 women aged 15-49)	12.8	8.0 (87)	13.6 (97)	Increasing
Total Induction Rate (per 100 hospital deliveries)	25.3	12.0 (88)	25.3 (99)	Increasing
Cesarean Section Rate (per 100 hospital deliveries)	19.1	15.7 (94)	19.1 (99)	Increasing
Perinatal Mortality rate (per 1,000 total births)	10.1	7.8 (98)	10.8 (90)	No trend
Neonatal Mortality Rate (per 1,000 live births)	3.7	3.4 (98)	5.0 (90)	Decreasing
Post-Neonatal Mortality Rate (per 1,000 live births)	2.0	1.4 (97)	4.0 (86)	Decreasing
Infant Mortality Rate (per 1,000 live births)	5.8	4.9 (97)	8.9 (86)	Decreasing

Sources:
Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
Births and Deaths, 1997, Statistics Canada (shelf tables).
Alberta Congenital Anomalies Surveillance System, 1980-99, November 2000 release.

National Comparisons

- Shown in the table below are national and provincial comparisons of selected major indicators for 1997 (the most recent year for which comprehensive national data are available).
- More detailed information on national data can be found in the newly published Canadian Perinatal Health report (2000) by Health Canada, through the Canadian Perinatal Health Surveillance System (http://www.hc-sc.gc.ca/hpb/lcdc/brch/reprod.html).

National/Provincial Comparisons of Major Indicators of Reproductive Health , 1997

Indicator	Canada	Alberta
Crude Birth Rate (per 1,000 population)	11.6	13.1
General Fertility Rate (per 1,000 women aged 15-49)	44.0	48.3
Total Fertility Rate (per 1,000 women)	1,552	1,708
Mean Maternal Age at Delivery (years)	28.5	28.1
Stillbirth Rate (per 1,000 total births)	6.1	6.8
Low Birth Weight Rate (per 100 live births)	5.8	6.2
High Birth Weight Rate (per 100 live births)	12.3	11.4
Small for Gestational Age Rate (per 100 live births)	8.6	9.2
Large for Gestational Age Rate (per 100 live births)	10.7	10.5
Pre-Term Birth Rate (per 100 live births)	7.0	7.3
Multiple Birth Rate (per 100 live births)	2.5	2.5
Breastfeeding Initiation Rate	76.7[1]	84.1[2]
Induced Abortion Rate (per 1,000 women aged 15-44)	16.8	15.6
Total Induction Rate (per 100 hospital deliveries)	18.5[3]	23.6
Cesarean Section Rate (per 100 hospital deliveries)	19.1[4]	16.5
Perinatal Mortality rate (per 1,000 total births)	9.3	9.8
Neonatal Mortality Rate (per 1,000 live births)	3.9	3.5
Post-Neonatal Mortality Rate (per 1,000 live births)	1.6	1.4
Infant Mortality Rate (per 1,000 live births)	5.5	4.9

Sources:
Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
Births and Deaths, 1997, Statistics Canada (shelf tables)
Health Canada, 2000a

Notes:
1.Per 100 infants.
2.Per 100 mothers.
3.Excludes Quebec.
4.Excludes Quebec, Nova Scotia, and Manitoba.

Fertility

Fertility rates

- The **general fertility rate** (number of live births per 1,000 women aged 15-49 in a given year) has decreased markedly from the fifteen-year high of 66.1 in 1985 to the low of 47.7 in 1999 (see Table A1 and Figure 1).
  - The decreasing trend over the last fifteen years applies to the **RHAs** as well (see Table A2), although the actual rate varies across the RHAs. In 1999, the rate was lower than the provincial average in residence RHAs 3, 4, 7, and 10, and higher than the provincial average in all other RHAs with the exception of RHAs 5, 8, and 16 (see Map 1).
- **Total fertility rate** (number of live births per 1,000 women aged 15-49 over a lifetime) is an estimate of average family size (e.g., a total fertility rate of 2,000 would indicate an average of 2.0 live births per woman over a lifetime). This rate has declined in Alberta from the fifteen-year high of 1,887 in 1985 to 1,718 in 1999 (see Table A1).
  - Total Fertility Rate in **Canada** shows a similar declining trend, although the rate is consistently higher in Alberta (Statistics Canada, 1997, 1999). In 1997, the total fertility rate was 1,552 in Canada and 1,708 in Alberta.
- **Age-specific fertility rates** show declining fertility in women under 30 years, and increasing fertility for women aged 30 to 44 years (see Table A3).
  - Women aged 25-29 continue to have the highest fertility rates. Since 1996, the age-specific fertility rate for women aged 30-34 has exceeded that of 20-24 year old women.
  - Similar trends occur in **national** data (Statistics Canada, 1999). Fertility rates are higher in Alberta for women under 30, while national and provincial fertility rates are virtually identical for women aged 30 and older. Figure 2 shows Canada and Alberta age-specific fertility rates for 1997.
  - Table A4 shows age-specific fertility rates for the RHAs for 1997 to 1999.

Figure 1.
General Fertility Rate (per 1,000 Women Aged 15-49),
Alberta, 1985 to 1999

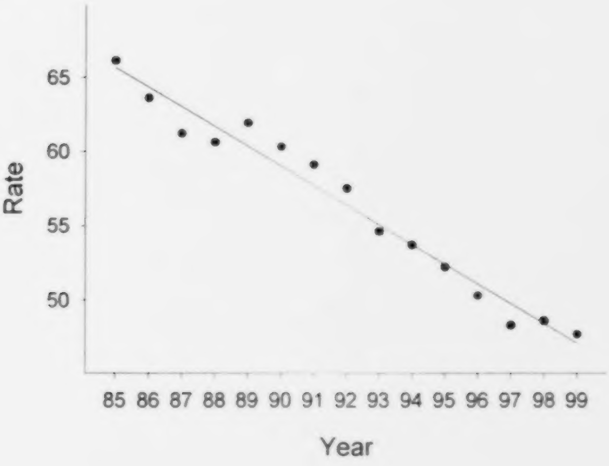
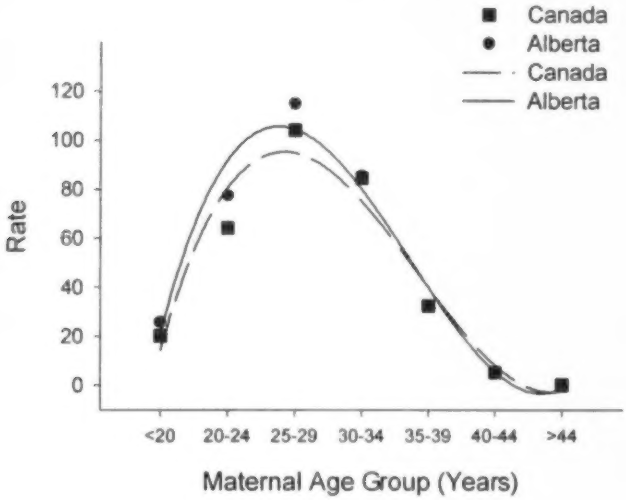
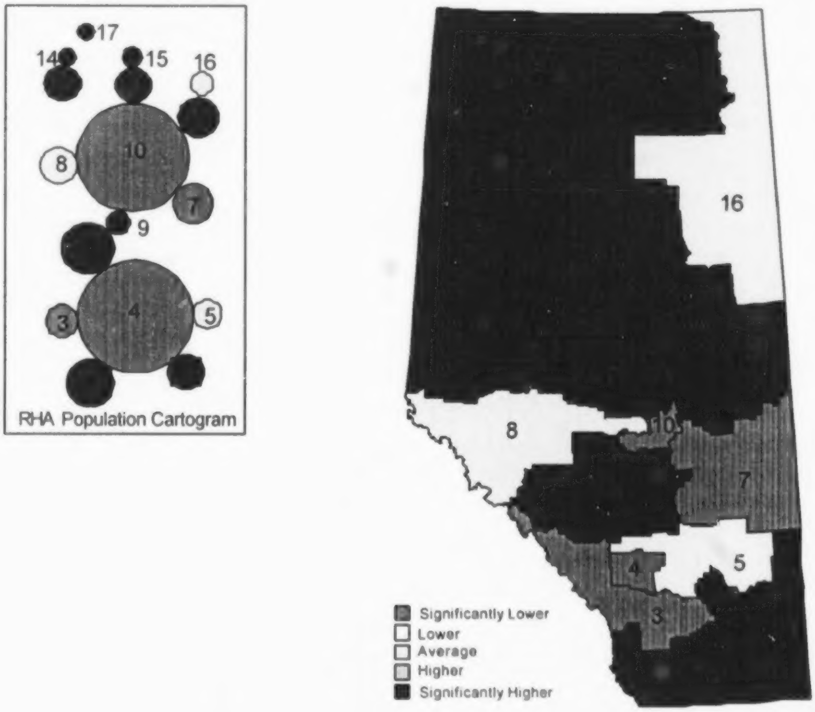


Figure 2.
Age-Specific Fertility Rates (per 1,000 Women Aged 15-49),
Canada and Alberta, 1997



Map 1. General Fertility Rate (per 1,000 Women Aged 15-49) by Residence RHA, Alberta, 1999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RHA Population Cartogram
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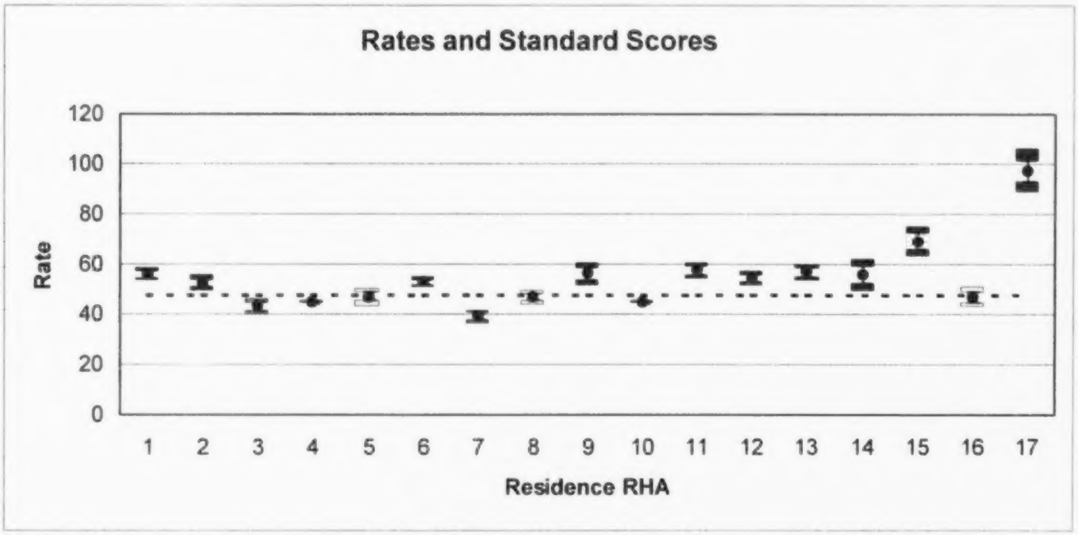
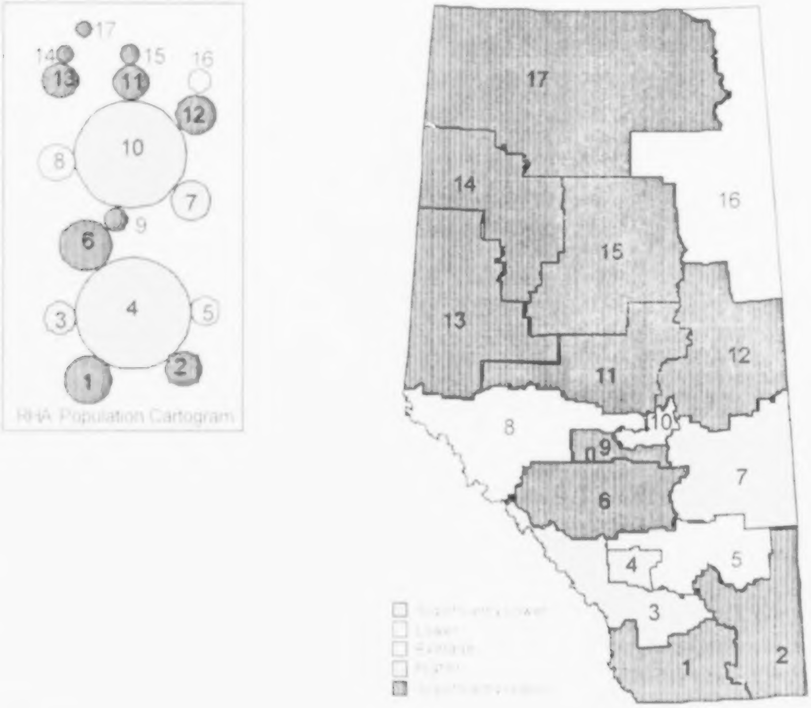
Lower
Average
Higher
Significantly Higher



Map 1. General Fertility Rate (per 1,000 Women Aged 15-49) by Residence RHA, Alberta, 1999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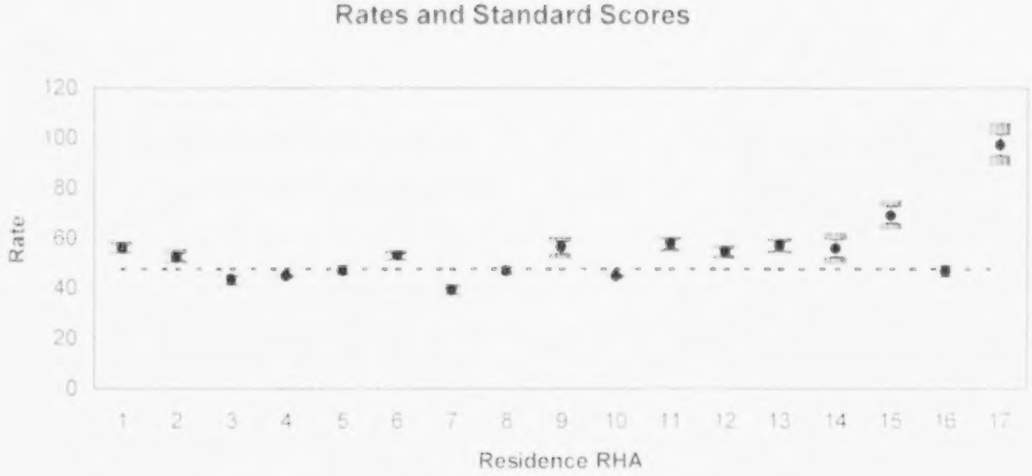

Rates and Standard Scores

Estimated pregnancies

- An estimate of total pregnancies in the province in a given time period can be obtained by summing live births, stillbirths, spontaneous abortions, and induced abortions in that period. Because spontaneous abortions that are not recognized or have not been reported to physicians cannot be accounted for, pregnancies are underestimated.
- There were 52,845 **estimated pregnancies** in Alberta in 1999 (see Figure 3).
- The **estimated pregnancy rate** (per 1,000 women aged 15-49) fell to 66.7 in 1999, the fifteen-year low (see Table A1).
  - As shown in Table A5, pregnancy rates have *increased* for women between 30 and 44 years over the fifteen-year study period. The linear trends for women aged less than 15, 15-19, 20-24, 25-29, or over 44 years are not statistically significant.
  - Women aged 25-29 years continue to have the highest pregnancy rates of all age groups. Women aged 20-24 also continue to have the second highest pregnancy rate of all age groups, though the rate for 30-34 year olds is now approaching that of the 20-24 year olds. Figure 4 shows the relationship between maternal age group and estimated pregnancy rate; this is a significant quadratic trend.
- Estimated pregnancy rates for residence RHA's appear in Table A6.
- There were 139.8 estimated pregnancies for every 100 live births in Alberta in 1999.

Figure 3.

Estimated Pregnancies, Alberta, 1986 to 1999

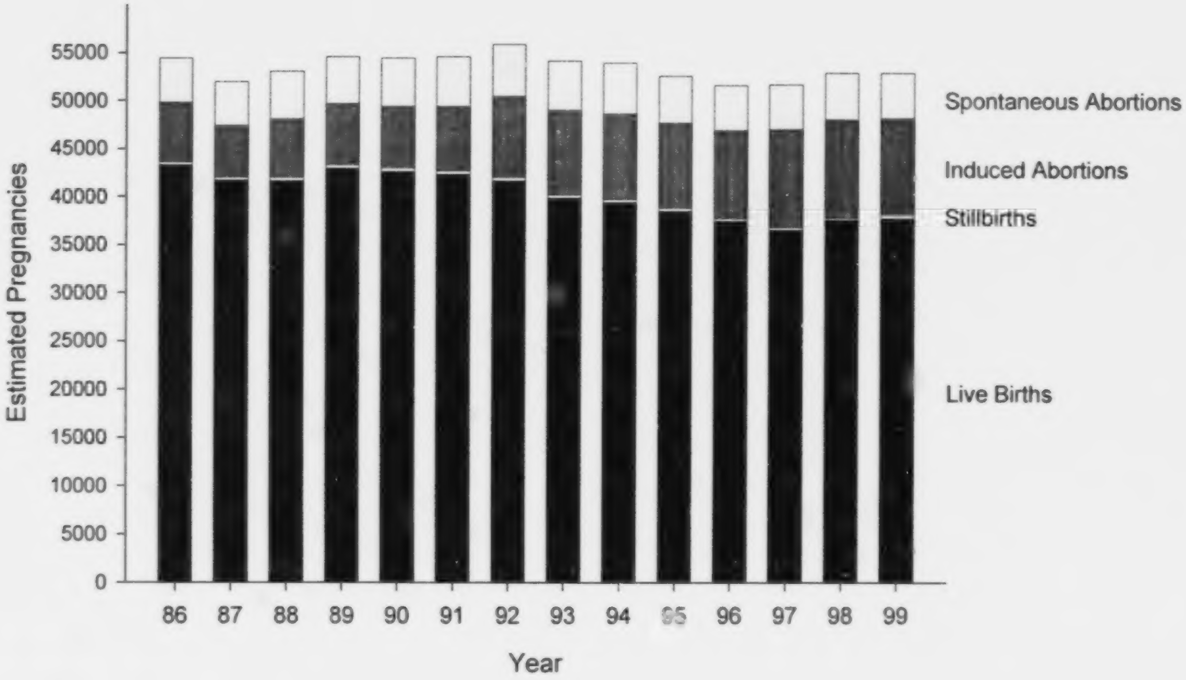
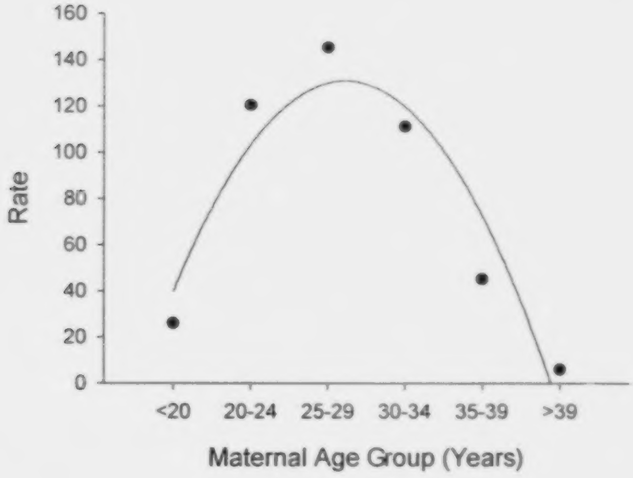


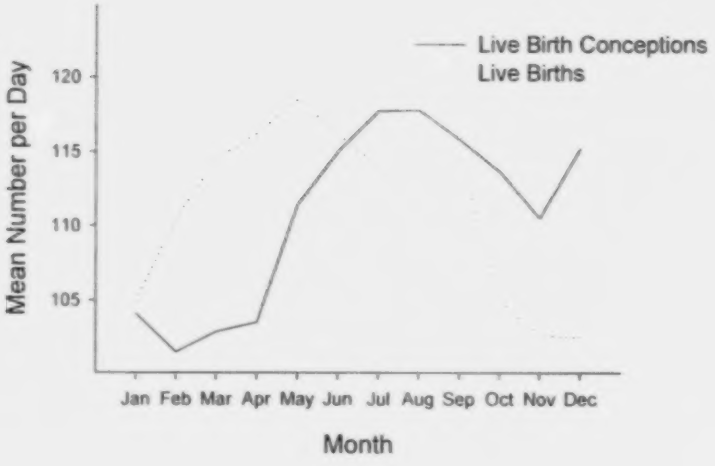
Figure 4.
Estimated Pregnancy Rate (per 1,000 Women Aged 15-49)
by Maternal Age Group, Alberta, 1997 to 1999 Combined



Conception/birth month

- There is monthly variation in the **mean number of conceptions of live births per day**, and the **mean number of live births per day** (seeTable A7).
- Figure 5 depicts daily mean number of conceptions of live births and live births by month.
  - Conceptions of live births are at their lowest in the first four months of the year, and peak in July and August. Conceptions decline somewhat in the fall and increase slightly in December.
  - Live births are at their lowest from October to January and peak in May, with an increase in September after a decline from June through August.
- Similar patterns occur in **Canadian** data. In 1997, the lowest mean number of live births per day in Canada was observed from October through January. The mean number of live births per day peaked in April and May, with a slight increase in September (Statistics Canada, 1999). The September upturn has been observed in the United States and Europe as well (Ford & Nault, 1996).

Figure 5.
Mean Number of Live Births and Live Birth Conceptions per Day, by Month, Alberta, 1985 to 1999 Combined



Maternal Age

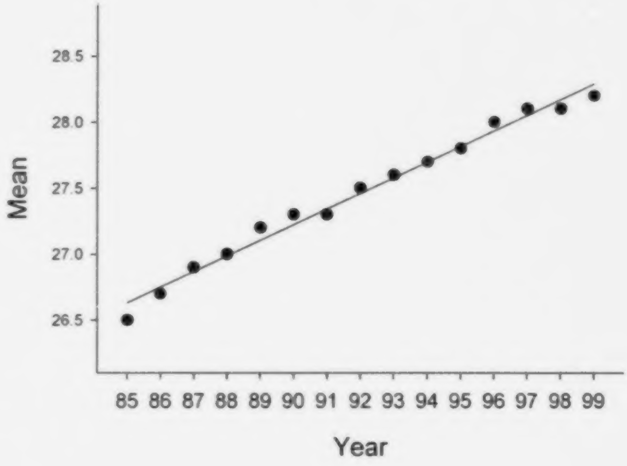
- Mothers 30 years and over are more likely than mothers aged 20-29 years to have cesarean sections, low birth weight births, pre-term births, maternal complications, and infants with chromosomal anomalies (MacNab, Macdonald, & Tuk, 1997).
- Delaying childbearing to age 35 or older increases risk of low birth weight, pre-term, and multiple births (Tough, Svenson, Johnston, Newburn-Cook, Rose, and Belik, 2000).
- Teenaged mothers are more likely than mothers aged 20-29 to have low birth weight or pre-term infants (Tough, Svenson, & Schopflocher, 1999). Pregnant teenagers have increased risk of health problems (Dryburgh, 2000).
- Most pregnancy outcomes vary with maternal age. A summary table for 1997 to 1999 combined appears below. Note that the midwife attendant rate includes only births for which the primary attendant was a midwife (whether in or out of hospital). Thus some births with both a midwife and physician in attendance would not be included in these counts, leading to an underestimate of the true rate.
- In 1999, the **average maternal age at delivery** was 28.2 years, the highest in fifteen years. In 1985, average maternal age was 26.5 years, the fifteen-year low (see Table A8). This increase is a significant linear trend (see Figure 6).
  - Average maternal age at delivery is slightly lower in Alberta than in **Canada** as a whole, but later childbearing is a trend in Canada as well as in Alberta. Mean maternal age in Canada in 1997 was 28.5, compared with 28.1 in Alberta (Statistics Canada, 1999).
  - Average maternal age at delivery for live birth by **residence RHA** for 1997 to 1999 combined is shown below. Although average maternal age is somewhat higher than the provincial average in RHA 4, none of the regional rates are significantly different from the provincial average.
- **Maternal age at first birth** has increased in Alberta from 24.7 in 1985 to 26.2 in 1999 (see Table A8).

Selected Pregnancy Outcomes by Maternal Age Group, Alberta, 1997 to 1999 Combined

		Age Group					
	Total	**<20**	**20-24**	**25-29**	**30-34**	**35-39**	**>39**
Low birth weight rate per 100 live births	**6.1**	7.1	5.8	5.5	6.0	7.4	8.3
High birth weight rate per 100 live births	**12.1**	9.8	10.9	12.5	12.9	12.6	13.1
Small for gestational age rate per 100 live births	**8.7**	10.7	9.4	8.4	7.9	9.0	10.6
Large for gestational age rate per 100 live births	**11.1**	9.0	9.7	11.3	12.1	12.1	12.8
Pre-term rate per 100 live births	**7.5**	8.4	7.2	6.9	7.4	8.9	10.0
Multiple birth rate per 100 live births	**2.6**	1.0	1.7	2.4	3.4	3.9	3.8
Average birth weight for singleton term births (grams)	**3,472**	3,422	3,452	3,481	3,492	3,471	3,464
Stillbirths per 1,000 total births	**6.3**	7.4	5.8	5.9	5.6	8.2	9.8

Sources:
Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.

Figure 6.
Mean Maternal Age (Years), Alberta, 1985 to 1999



Mean Maternal Age (Years) by Residence RHA, Alberta, 1997 to 1999 Combined

RHA	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	**Alberta**
Mean	27.0	27.0	28.7	29.3	27.3	27.0	27.7	27.7	26.5	28.5	27.3	26.9	26.6	26.2	25.5	26.7	25.4	**28.1**

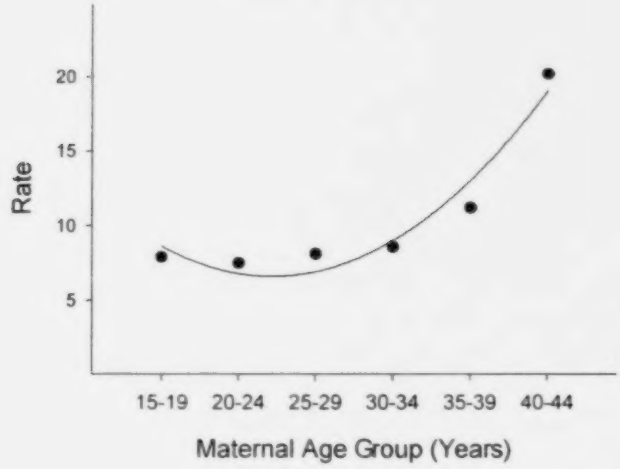
Sources:
Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Birth Outcomes

Spontaneous Abortions

- Included in this category are clinical spontaneous abortions treated by a physician; this is of course an underestimate of all spontaneous abortions. Nevertheless, the rates are informative, allowing approximation of time trends and maternal age effects.
- The **spontaneous abortion rate (per 1,000 women aged 15-49)** has declined in recent years, which is not surprising, given declining fertility rates (see Table A1).
- The **spontaneous abortion rate (per 100 estimated pregnancies)** has varied over the last fifteen years, peaking in at 9.8 in 1994 and declining since then (see Table A1). The 1999 rate was 9.0.
- Spontaneous abortion rates vary with **maternal age** group (see Table A9). The rate (per 1,000 women aged 15-49) is highest for women in the highest fertility groups, which included women aged 20 –34.
- As shown in Figure 7 (and Table A9), the spontaneous abortion rate (per 100 estimated pregnancies) for 1997 to 1999 combined follows a significant quadratic trend with **maternal age** group. Rates for women under 15 or over 44 are not included in the figure due to low numbers of spontaneous abortions in these age groups, making rates unreliable. The rate is relatively stable for women under 39, but increases dramatically for women over 39. For the 40-44 age group, 20.2% of estimated pregnancies end in spontaneous abortion.
- Spontaneous abortion rates by **residence RHA** are shown in Table A10.

Figure 7.
Spontaneous Abortion Rate (per 100 Estimated Pregnancies), by Maternal Age Group, Alberta, 1997 to 1999 Combined



Live Births

- The total number of **live births** has fallen 12.8% since the fifteen-year high of 43,327 in 1985, to 37,797 in 1999 (see Table A1).
- Total births (including live births and stillbirths) by level of hospital care appear in Table A11 (see Appendix 5 for definition of levels of hospitals). In 1998, 50.8% of births occurred in Level II hospitals, 24.6% in Level I hospitals, 23.6% in Level III hospitals, and 1.0% out of hospital (see reference Health Canada 2000b for definition on level of hospital care).
- The decrease in live births is concurrent with an increase in the population of the province. Consequently, the **Crude Birth Rate** (number of live births per 1,000 population) has declined from the fifteen-year high of 18.5 in 1985 to the fifteen-year low of 12.9 in 1999 (see Table A1).
  - The **Canadian** crude birth rate underwent a similar rate of decline over the last several years, though the absolute rate was consistently higher in Alberta. In 1997, the Canadian crude birth rate was 11.6, while the Alberta rate was 13.1 (Statistics Canada, 1999).

Stillbirths

- Stillbirths refer to births with the complete expulsion or the extraction from the mother after at least 20 weeks pregnancy, or after attaining a weight of 500 grams or more, of a fetus in which, after the expulsion or the extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord or unmistakable movement of voluntary muscle (Alberta Vital Statistics Act, RHA 1980,cV-4 s1).
- Many risk factors for stillbirth have been identified, such as low maternal education, smoking during pregnancy, gender (stillbirths are more often male than female), prematurity, and low birth weight (Chen, Fair, Wilkins, Cyr and the Fetal and Infant Mortality Study Group of the Canadian Perinatal Surveillance System, 1998; Tough, Svenson, & Schopflocher, 1999).
  - MacNab, Macdonald and Tuk (1997) report that multiparous but not primiparous mothers over 34 years have a higher risk of stillbirth than younger mothers.
  - There is a risk of recurrence for stillbirth (Oyen, Skjaerven, & Irgens, 1996).
- There were 267 stillbirths in Alberta in 1999, which represents a **stillbirth rate** of 7.0 (per 1,000 total births; see Table A1 and Figure 8). There is no time trend evident in the data from 1985 to 1999. The 1998 rate of 5.1 appears to be an anomalous drop; the rate will need to be followed for a few more years to determine whether there is a trend developing.
- The **Canadian** stillbirth rate for 1997 was 6.1 (Statistics Canada, 1999), compared with the Alberta rate of 6.8.
- Stillbirth rates vary with **maternal age** (see Table A12). Stillbirths are more common with mothers outside the 20-34 age group. Figure 9 shows the significant quadratic relationship between maternal age group and stillbirth rate, summed across all stillbirths from 1985 to 1999.
- Stillbirths and stillbirth rates in each of several weight categories are shown in Table A13. For 1985 to 1999 combined, 72.8% of stillbirths were of low birth weight (<2,500 grams) and 46.2% were extremely low birth weight (<1,000 grams). Only 2.0% of stillbirths delivered were high birth weight (≥4,000 grams).
- The majority of stillbirths occur before term; 71.9% of stillbirths were pre-term births from 1985 to 1999.
- Table A14 shows the antepartum and intrapartum deaths by weight distribution. Antepartum deaths accounted for 66.3% of stillbirths in 1998.

Figure 8.
Stillbirth Rate (per 1,000 Total Births),
Alberta, 1985 to 1999

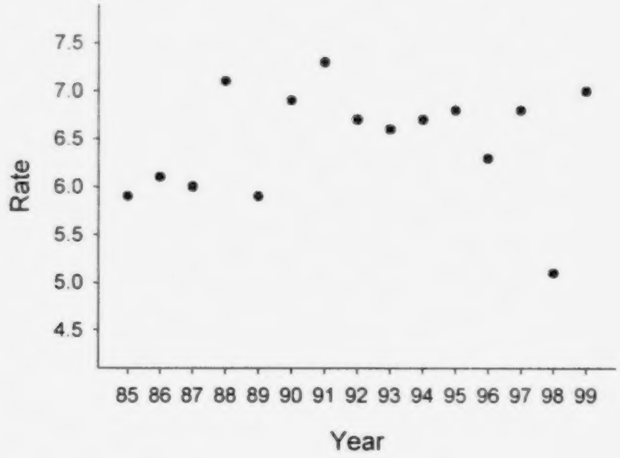
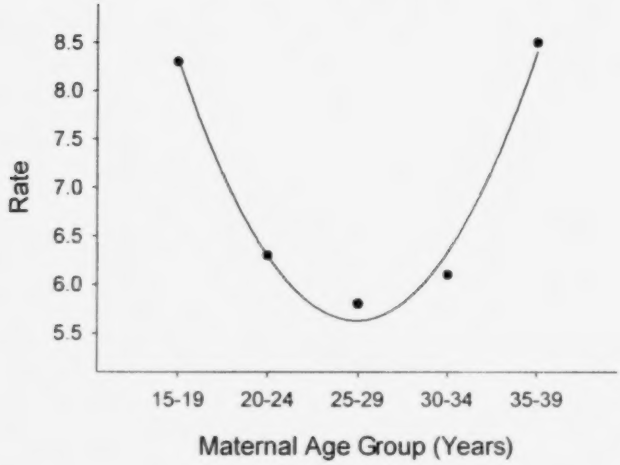


Figure 9.
Stillbirth Rate (per 1,000 Total Births)
by Maternal Age Group, Alberta, 1985 to 1999



Perinatal Morbidity

- See Appendix 5 for a perinatal morbidity report from the Northern Alberta Neonatal and Infant Follow-up Clinic.

Congenital Anomalies

- Congenital anomalies are an important indicator of perinatal health. Congenital anomalies may lead to low birth weight, pre-term delivery, or fetal or infant death.
- Table A15 shows the prevalence of selected congenital anomalies from 1985 to 1999.
  - The rate (per 1,000 total births) of **all congenital anomalies combined** shows a significant linear decrease over the fifteen-year period (see Figure 10). The 1999 rate was 31.1; this was the fifteen-year low. The highest rate was 48.5, in 1990. Note that number of *anomalies* was counted; infants may have had more than one anomaly.
  - The **neural tube defect** (NTD) rate (per 1,000 total births) has declined slightly over the fifteen-year study period (see Figure 11). Increasing awareness of NTDs and corresponding interventions (use of folic acid, prenatal screening, etc.) may have contributed to the decline.
- **Maternal age** is related to the rate of anomalies (see Table A16). Mothers giving birth at age 35 or older have a higher risk for congenital anomalies (see Figure 12), especially for Down Syndrome (see Figure 13). Note that the overall Down Syndrome rate increase seen in Table A15 is confounded with increasing maternal age: More older mothers are giving birth, thus more Down Syndrome babies are being born. The Down Syndrome rate is not increasing for mothers under 35.
- More detailed information on congenital anomalies will be available from the report of the Alberta Congenital Anomalies Surveillance System, 1980-1998 (upcoming).

Figure 10.
All Congenital Anomalies Combined Rate
(per 1,000 Total Births), Alberta, 1985 to 1999

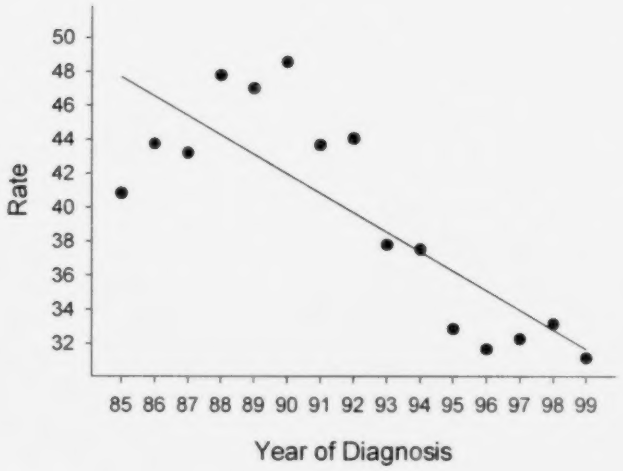


Figure 11.
Neural Tube Defect Rate (per 1,000 Total Births), Alberta, 1985 to 1999

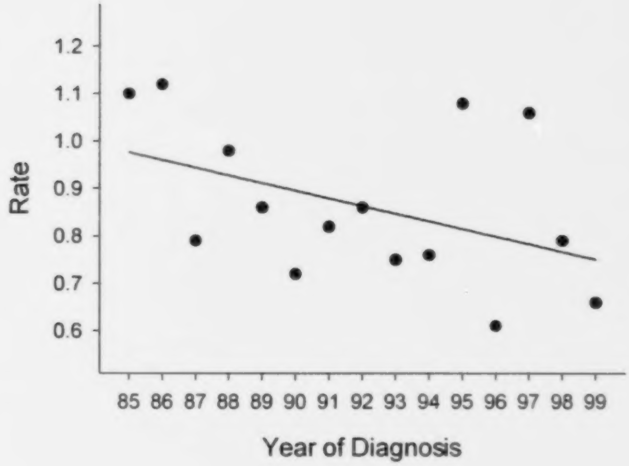


Figure 12.
All Congenital Anomalies Combined Rate (per 1,000 Live Births) by Maternal Age Group, Alberta, 1985 to 1999

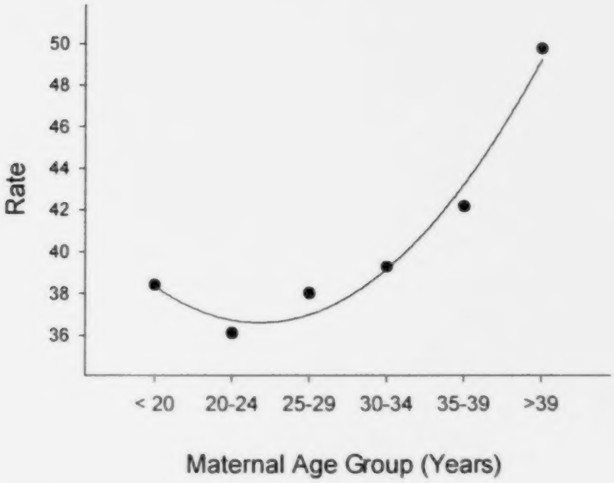
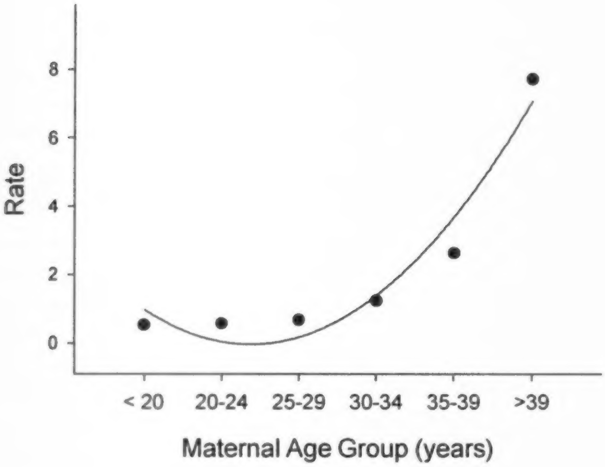


Figure 13.
Down Syndrome Rate (per 1,000 Live Births)
by Maternal Age Group, Alberta, 1985 to 1999



Birth Weight

- In 1999, 81.5% of live births were between 2,500 and 3,999 grams, 5.9% were low birth weight (< 2,500 grams) and 12.6% were high birth weight (≥4,000 grams) (see Table A17).
- **Mean birth weight** in **Canada** in 1997 was 3,389 grams (Statistics Canada, 1999); the mean for Alberta in 1997 was 3,368 grams.

Low birth weight

- Low birth weight infants weigh less than 2,500 grams.
- Low birth weight is correlated with a number of health concerns, including maternal, fetal, neonatal and long-term complications (Millar & Chen, 1998; Pivarnik, 1998)) and fetal and infant mortality (Chen et al., 1998; Nault, 1997). Low birth weight rates are thus an important indicator of children's health.
- Numerous risk factors for low birth weight have been identified, including smoking or alcohol/drug use during pregnancy, low or high maternal age, low socioeconomic status, multiple pregnancy, poor prenatal care, low level of maternal education, pre-term birth, and gender (low birth weight infants are more likely to be female) (Chen et al., 1998; Pivarnik, 1998; Pollack, Lantz, & Frohna, 2000; Tough, Svenson, & Schopflocher, 1999). Smoking is the most important modifiable behaviour associated with low birth weight (Wilkins & Houle, 1999).
- Increased use of in-vitro fertilization techniques is resulting in the birth of more low birth weight infants (Tough, Greene, Svenson, & Belik, 2000).
- The rate of neurodevelopmental impairment increases with decreasing birth weight (D'Agostino & Clifford, 1998).
- Since 1990, the low birth weight rate has included live newborns weighing less than 500 grams (see time trends in Table A17) due to changes in registration and reporting (Svenson, Schopflocher, Sauve, and Robertson, 1998) and improvements in and access to perinatal care.
- The **low birth weight rate** has increased over the fifteen-year study period (see Table A1 and Figure 14). In 1999, 5.9% of all live births were low birth weight births; this is a five-year low. The low birth weight rate was at its lowest in 1985, at 5.4, and peaked in 1997 and 1998 at 6.2.
  - The low birth weight rate for **singleton term births** fluctuated between 1.8 and 2.1 from 1985 to 1998, but dropped to 1.6 in 1999 (see Table A18). Thus low birth weight rate increases are a function of increasing pre-term births or multiple births or both.
- Table A19 provides a breakdown of low birth weight births, categorizing them as pre-term or term, and singleton or multiple births. In 1999, 71.6% of low birth weight births were **pre-term births** and 22.7% of low birth weight births were **multiple births**.
  - The percentage of low birth weight births that are **singleton term births** has generally been decreasing over the last fifteen years, while low birth weight singleton preterm births show no significant trend.
  - The percentage of low birth weight births that are **multiple pre-term births** has shown an increasing trend, though there is no trend for multiple term births.
- The **Canadian** low birth weight rate was 5.8 in 1997(Statistics Canada, 2000—1997 shelf tables), compared with 6.2 in Alberta in 1997.
- Low birth weight births for **residence and facility RHAs** are in Table A20.
  - Map 2 and Table A21 include data for residence RHAs from 1997, 1998, and 1999 combined. RHA 4 had a significantly higher rate of low birth weight births than the provincial average, while RHAs 1, 5, 11, 12, and 13 had rates that were significantly lower than the provincial average.
- Low birth weight rates vary with **maternal age**, as seen in Table A22 and Figure 15.
  - Over the last several years in Alberta, low birth weight rates have typically been low for mothers aged 20-34, and high for younger or older mothers. In the 1999 data, the teenage low birth weight rate fell to a fifteen-year low, the rate for mothers aged 30-34 years was elevated relative to previous years, and the rate for mothers over 35 years

remained high. It will be of interest to see if these rates are anomalous or part of a developing trend.

- Low birth weight infants may be **small for gestational age** (SGA), or pre-term, or both. These types of low birth weight may have different underlying causes, as well as different effects on later development (Millar & Chen, 1998; Wallace & McCarton, 1997). Relative to pre-term appropriate for gestational age babies, pre-term SGA babies have been found to have a greater rate of cognitive impairments (Wallace & McCarton, 1997).
- SGA refers to babies whose birth weight falls below the tenth percentile of appropriate for gestational age infants (see Robertson, Svenson, & Kyle, 1997). The **SGA rate for singleton live births** continues its steady decline from a rate of 11.1 per 100 singleton live births in 1985 to the fifteen-year low of 8.1 in 1999 (see Table A23).
- Combined data for 1997, 1998 and 1999 indicate that SGA rates vary with region (see Table A24). The SGA rate was higher than the provincial average in **RHAs** 2, 4, and 17. RHAs 1, 6, 7, 8, 11, 12, 13, and 16 had SGA rates that were lower than the provincial average (see Map 3).

Figure 14.
Low Birth Weight Rate (per 100 Live Births),
Alberta, 1985 to 1999

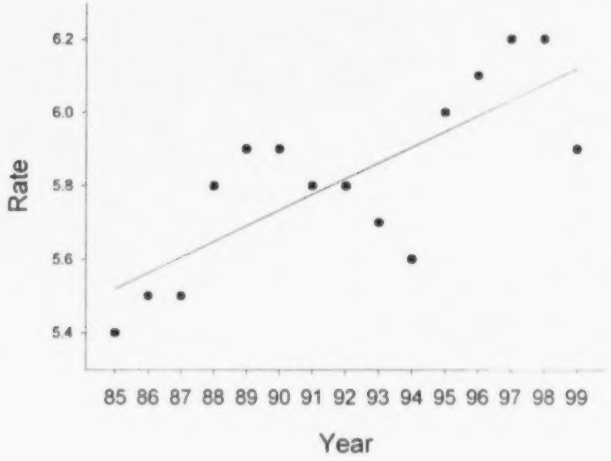
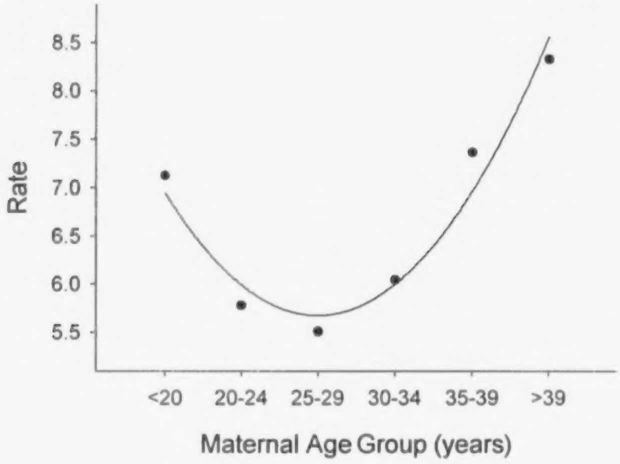
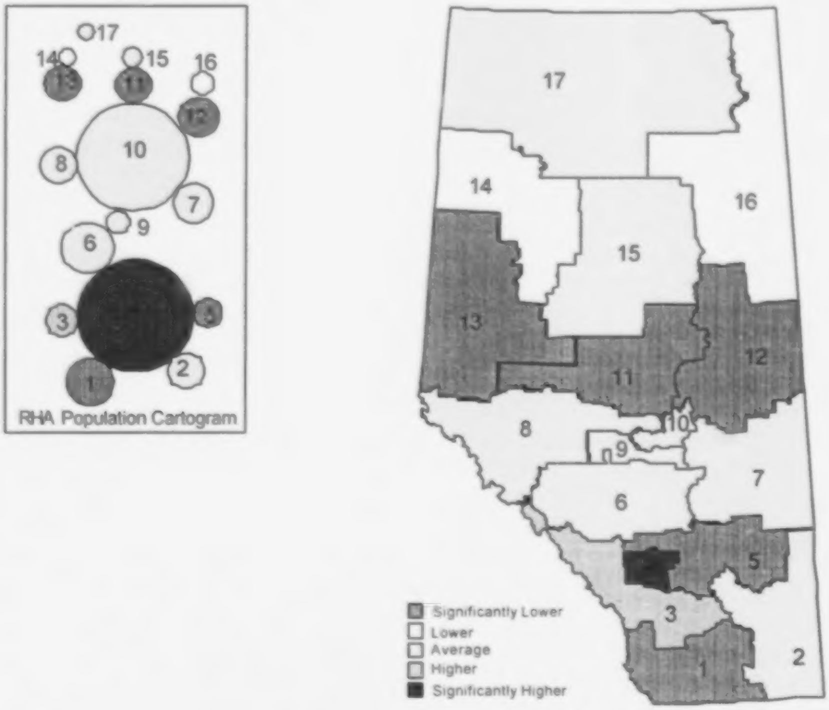


Figure 15.
Low Birth Weight Rate (per 100 Live Births)
by Maternal Age Group,
Alberta, 1997 to 1999 Combined



Map 2. Low Birth Weight Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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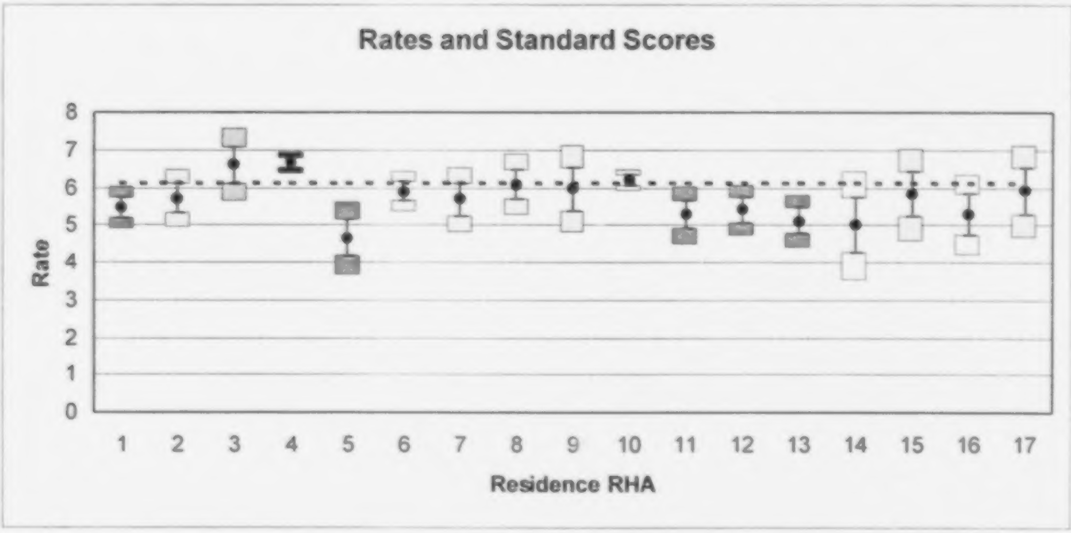
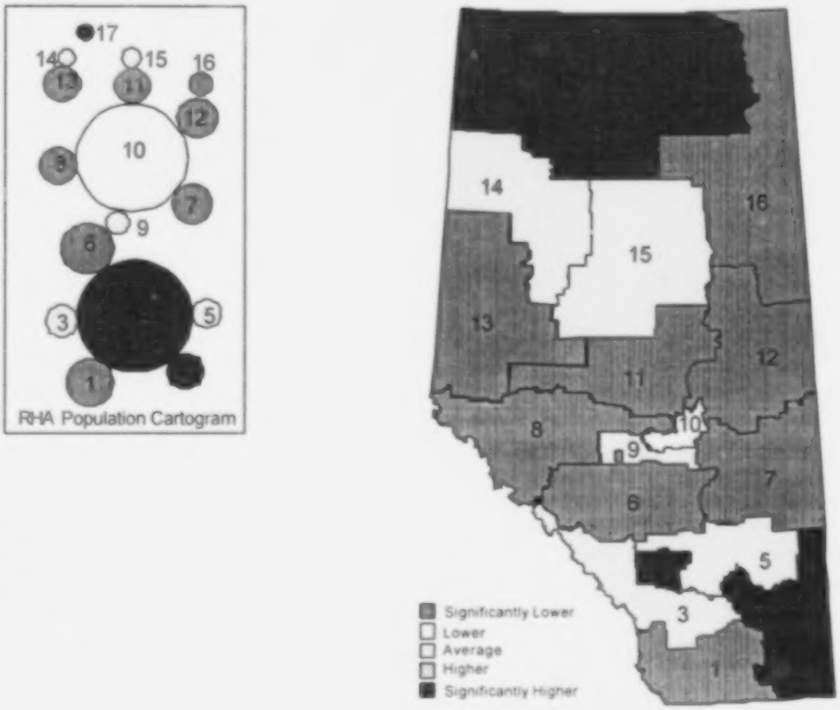


Map 3. Small for Gestational Age Singleton Birth Rate (per 100 Live Singleton Births) by Residence RHA, Alberta, 1997 - 1999 Combined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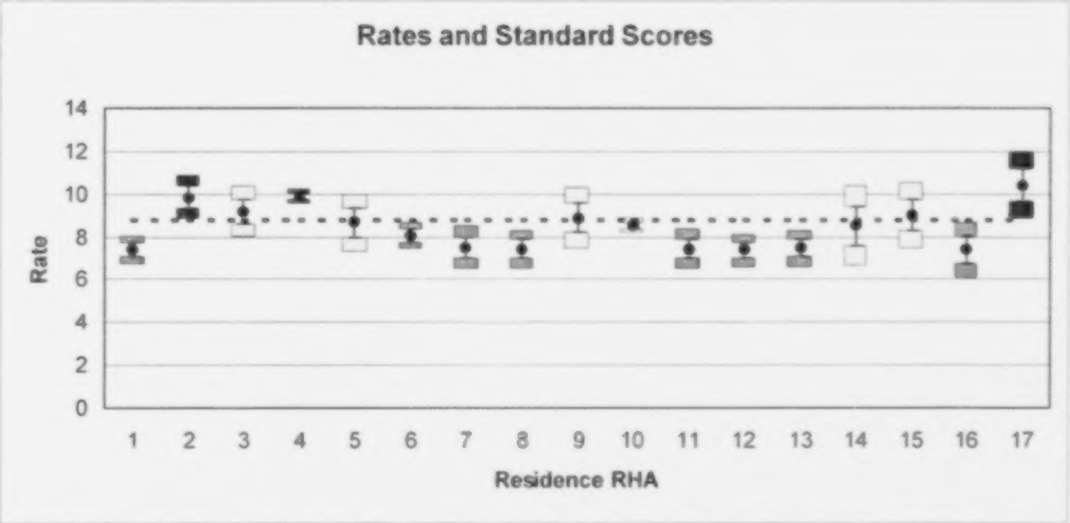
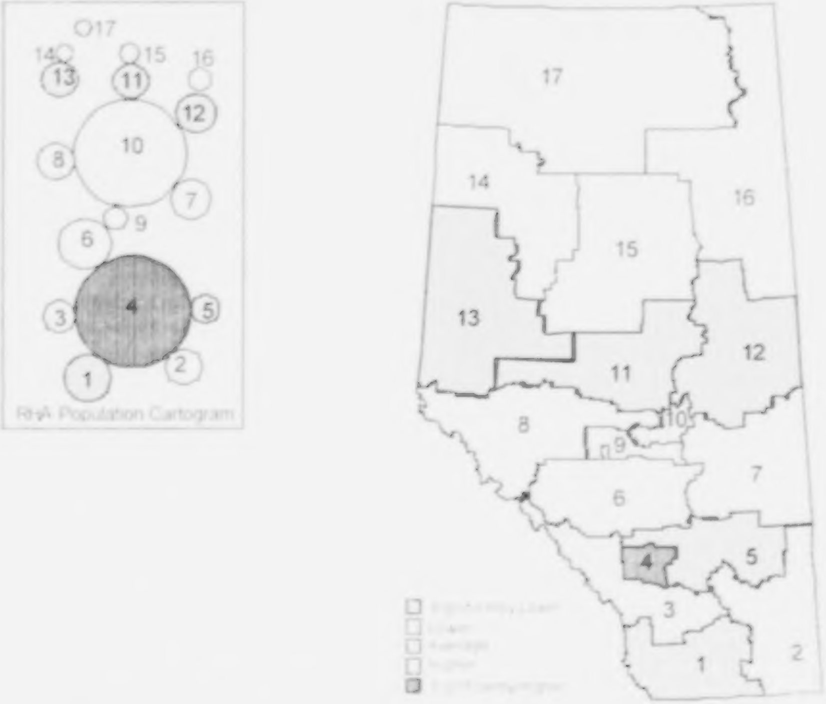


Map 2. Low Birth Weight Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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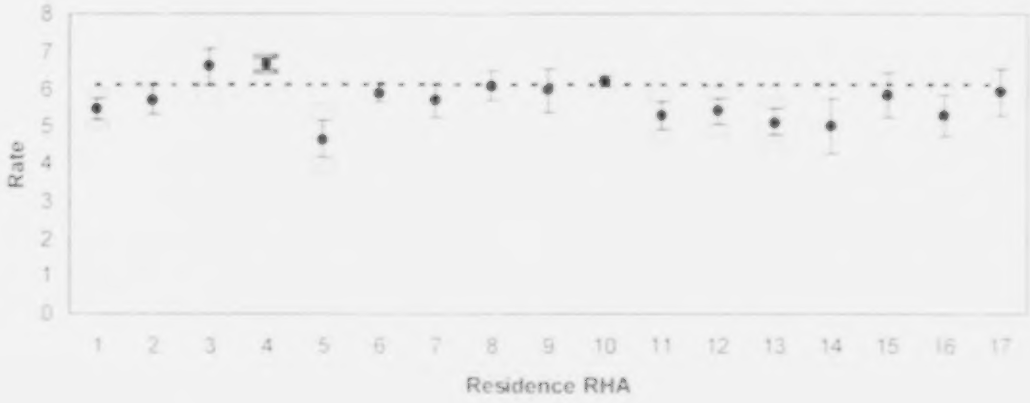
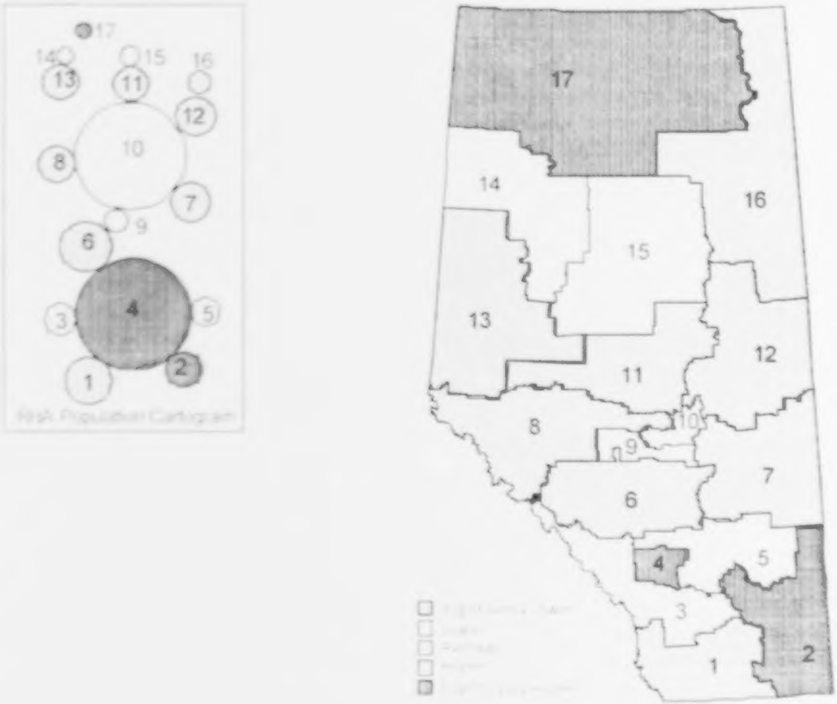


Map 3. Small for Gestational Age Singleton Birth Rate (per 100 Live Singleton Births) by Residence RHA, Alberta, 1997 - 1999 Combined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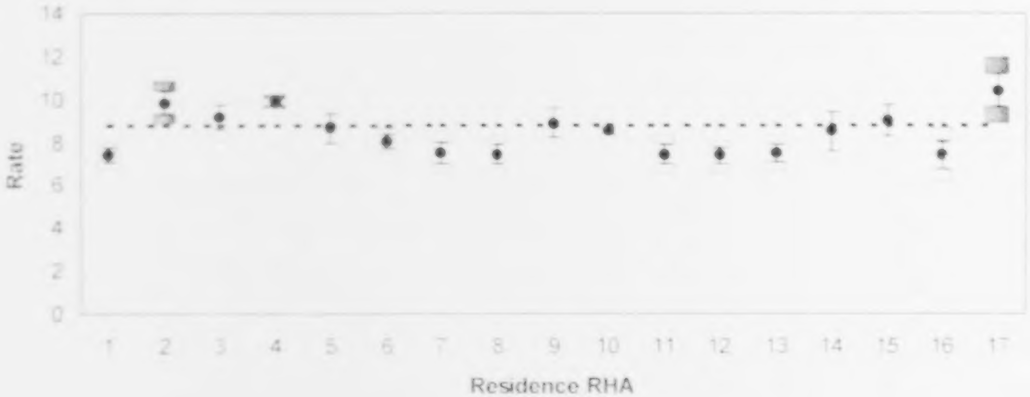
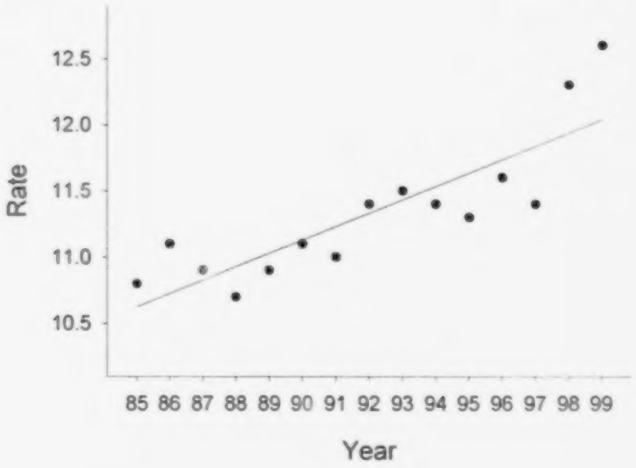


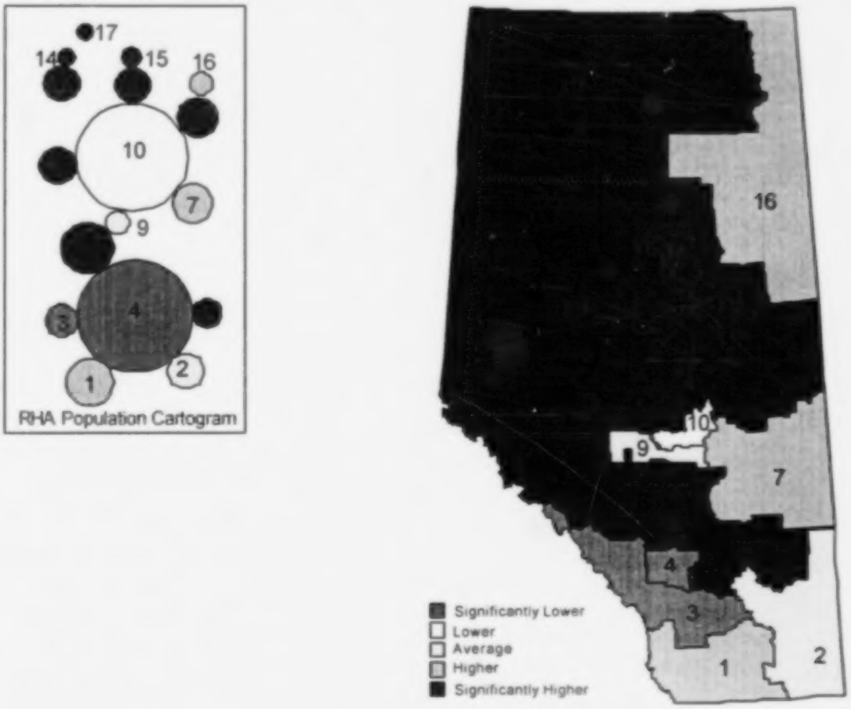
High birth weight

- High birth weight (HBW, ≥4,000 grams) has been associated with increased maternal complications at delivery (Poen, Felt-Bersma, Dekker, Deville, Cuesta, Meuwissen, 1997).
- **Average birth weight** has increased slightly over the fifteen-year study period (see Table A23). The fifteen-year low of 3,435 grams occurred in 1985, while the high was in 1999, at 3,486 grams. This linear trend (an increase of 51 grams) is significant.
- The **high birth weight rate** has increased noticeably over the last two years (see Table A1). The 1999 rate was 12.6 high birth weight births per 100 live births. This is the fifteen-year high (see Figure 16).
- The high birth weight rate for **Canada** in 1997 was 12.3 (Statistics Canada, 1999); the Alberta rate was 11.4.
- High birth weight rates for **residence and facility RHAs** are in Table A25.
  - Combined data for 1997, 1998, and 1999 show that residence RHAs 3 and 4 have lower HBW rates than the provincial average, while the rate is higher than the provincial average in RHAs 5, 6, 8, 11, 12, 13, 14, 15 and 17 (see Map 4 and Table A21).
- High birth weight babies are more likely to be born to older mothers (see Table A26). Teenage mothers have the lowest high birth weight rates, followed by mothers aged 20-24. Mothers over 25 have the highest rate of high birth weight babies.
- **Large for gestational age** (LGA) babies are those with birth weight above the 90th percentile of appropriate for gestational age infants (see Robertson, Svenson, & Kyle, 1997). Time trend information on LGA is provided in Table A23. The LGA rate has increased from 9.7 per 100 singleton births in 1985 to 11.9 in 1999, an increase of 23%.
  - When combined data for 1997 to 1999 are considered, **residence RHAs** 1, 6, 8, 11, 12, 15, 16, and 17 had LGA rates higher than the provincial average, while RHAs 2, 3, and 4 had LGA rates lower than the provincial average (see Map 5 and Table A24).

Figure 16.
High Birth Weight Rate (per 100 Live Births),
Alberta, 1985 to 1999



Map 4. High Birth Weight (≥4,000 Grams) Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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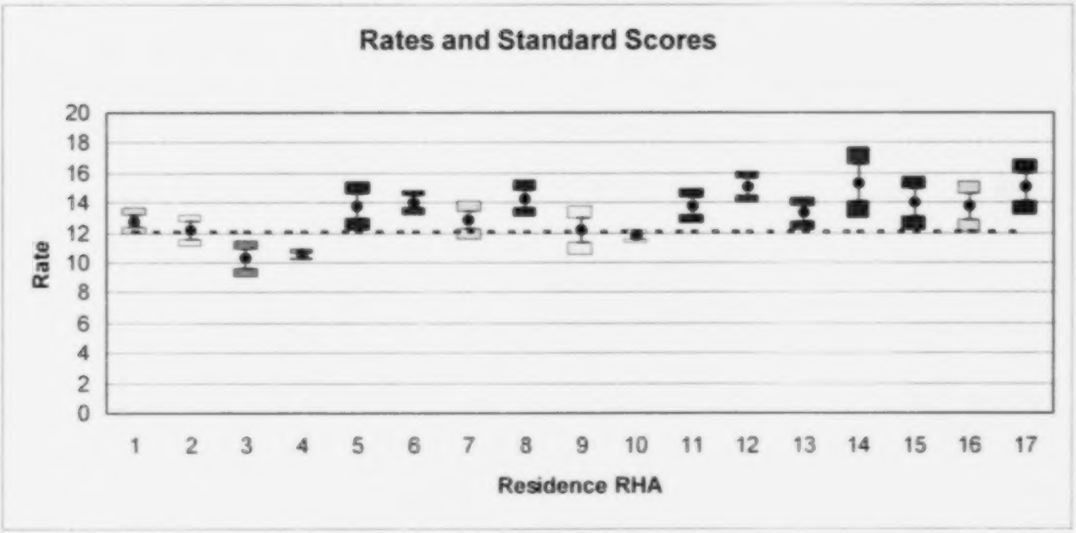
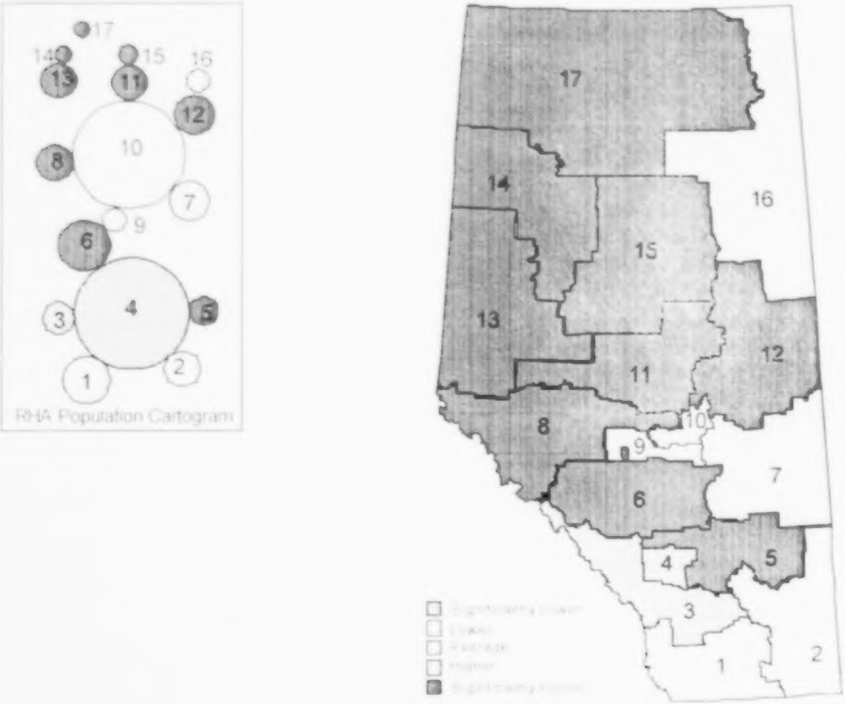


Map 4. High Birth Weight (≥4 000 Grams) Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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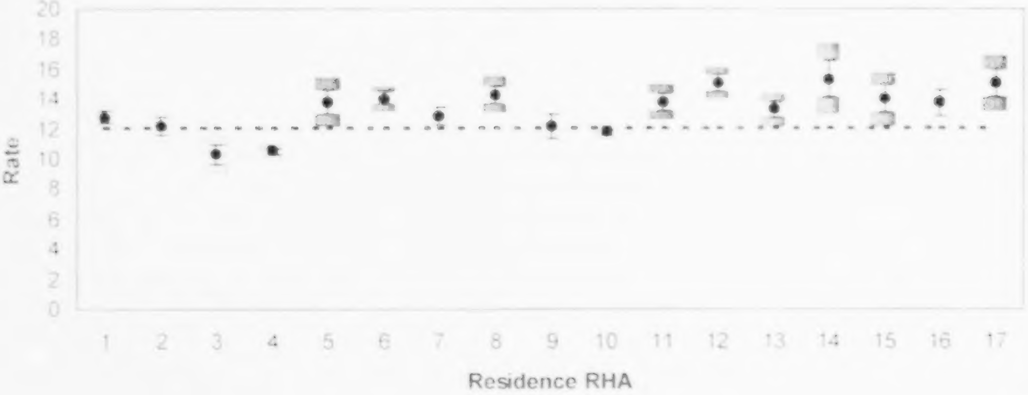
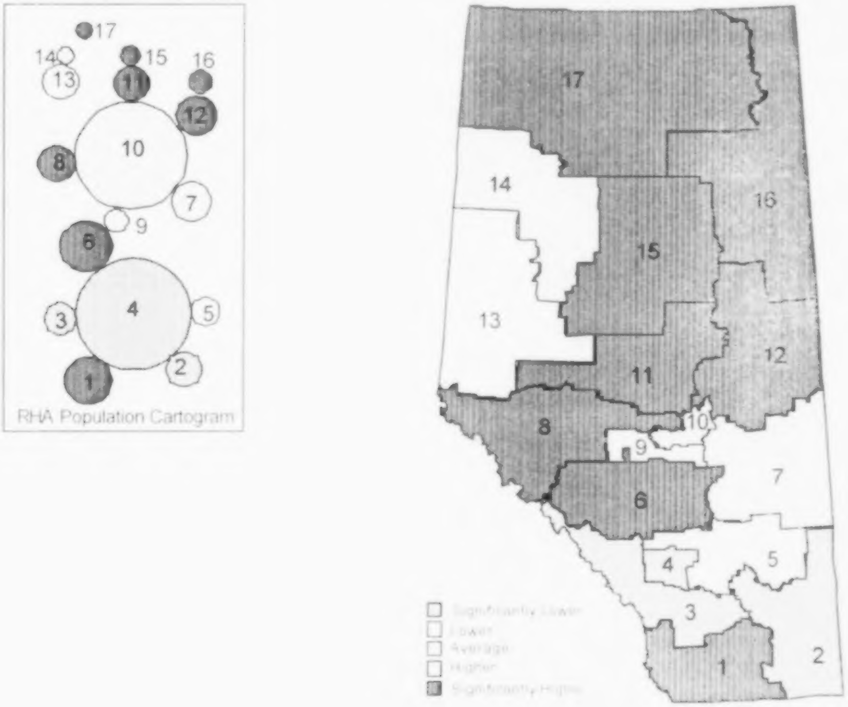


Map 5. Large for Gestational Age Singleton Birth Rate (per 100 Live Singleton Births) by Residence RHA, Alberta, 1997 - 1999 Combined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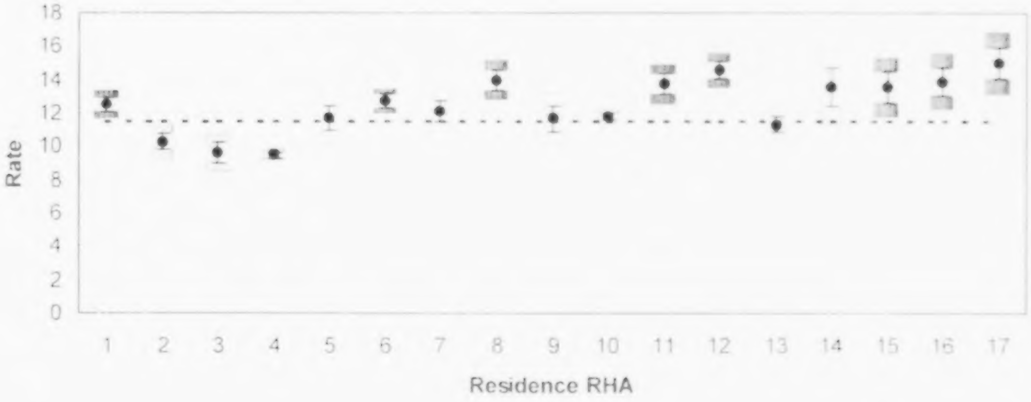
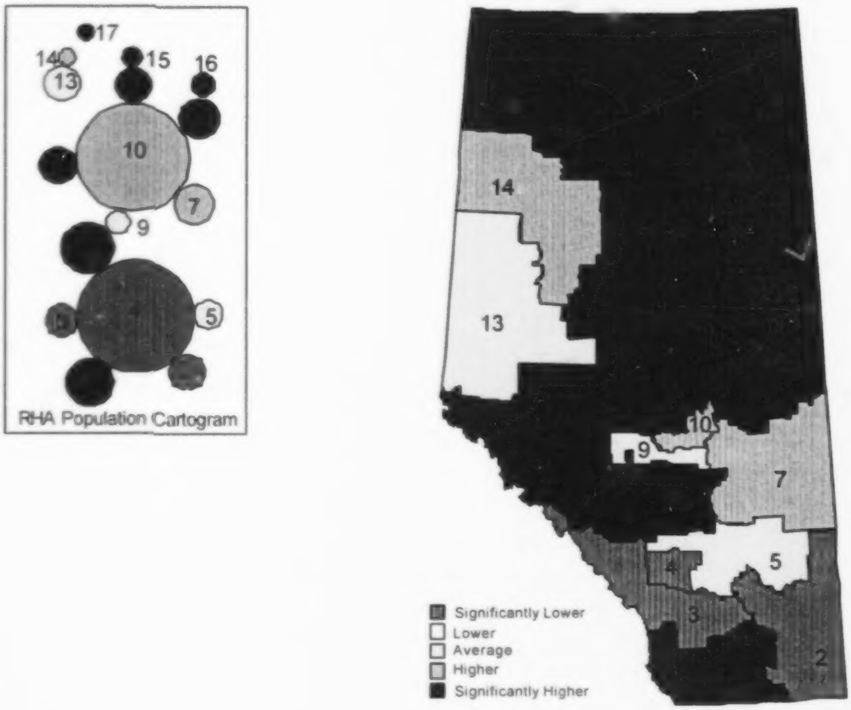


Map 5. Large for Gestational Age Singleton Birth Rate (per 100 Live Singleton Births) by Residence RHA, Alberta, 1997 - 1999 Combined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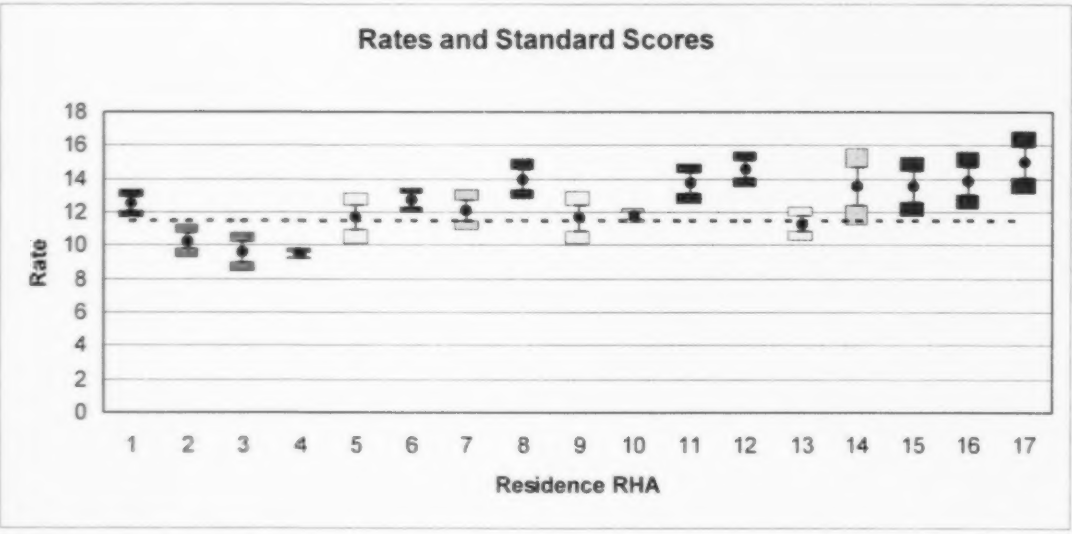


Pre-Term Births

- These are births that occur prior to 37 full weeks of gestation.
- The strong correlation between gestational age at birth and birth weight means that some health concerns and risk factors for pre-term infants may be similar to those for low birth weight infants.
- Maternal smoking has been shown to increase the risk of pre-term delivery for singleton births; as well, births before 33 weeks gestation for both twin and singleton births are more common in smokers (Pollack, Lantz, and Frohna, 2000).
- Pre-term delivery has also been associated with maternal pre-existing chronic illnesses, previous history of either pre-term birth, SGA birth, or neonatal death, pregnancy complications, and maternal age over 35 years (Alberta Health and Wellness, in press). Births resulting from in vitro fertilization are more likely to be pre-term than non-IVF births (Tough, Greene, Svenson, & Belik, 2000).
- Chen and Millar (1999) reported that children under three who were pre-term and low birth weight were more likely to be in poor health than both full-term low birth weight and pre-term normal birth weight children. This suggests that both low birth weight and pre-term birth are predictive of poor early childhood health.
- The **pre-term birth rate** (per 100 live births) continues the increasing trend that has occurred since 1995. The 1999 rate was 7.8, the fifteen-year high (see Table A1 and Figure 17).
- The **Canadian** pre-term rate for 1997 was 7.0 (Statistics Canada, 1999); the Alberta rate for 1997 was 7.3.
- Table A27 provides a breakdown of pre-term births, categorizing them as low birth weight or not low birth weight, and as singleton or multiple. In 1999, 54.7% of pre-term weight births were **low birth weight births** and 18.5% were **multiple births**.
  - The percentage of pre-term births that are **multiple** has shown an increasing trend, for both low birth weight and non-low birth weight births. This reflects the fact that multiple birth rates have been increasing.
  - The percentage of pre-term births that are singleton low birth weight births has been stable over the last fifteen years, while the percentage of pre-term births that are **singleton non-low birth weight** has decreased significantly.
- The **pre-term birth rate** for **singleton** and for **multiple births** shows increasing time trends, indicating that rising pre-term rates are not solely a function of increasing multiple birth rates (see Table A28). In 1999, 6.5% of singleton births and 52.8% of multiple births were pre-term.
- Pre-term, low birth weight, and high birth weight rates for both **residence and facility RHAs** for 1997 to 1999 combined are presented in Table A21.
- Pre-term births for 1985 to 1999 for **residence and facility RHAs** are provided in Table A29.
  - Map 6 provides the **residence RHA** data for 1997 to 1999 combined (data are in Table A21). The pre-term birth rate is higher than the provincial average in RHA 10, and lower than the provincial average in RHAs 1, 2, 6, 13, and 14.
  - **Facility RHA** data for 1997 to 1999 combined indicate that RHAs 4 and 10 (which have tertiary care centres) deliver significantly more pre-term births than the provincial average, while all other RHAs have pre-term rates lower than the provincial average.
- **Maternal age** is clearly related to the pre-term birth rate (see Table A30).
  - As can be seen in Figure 18, pre-term births were least likely in mothers aged 25 to 29 years in 1999; the rate is elevated for younger and older mothers. The 1999 data show a drop in the teenage pre-term birth rate, similar to the drop in the low birth weight rate for teenage mothers. It will be interesting to see if this is a developing trend.
  - As shown in the table below, **Canadian** data are comparable to Alberta data in terms of the effect of maternal age, though Alberta pre-term birth rates were higher than Canada's in 1997, in particular for teenage mothers (Statistics Canada, 1999).

Pre-term Birth Rate (per 100 live births) by Maternal Age Group, Alberta and Canada, 1997

Age group (years)	Alberta	Canada
< 20	8.6	7.9
20 - 34	6.9	6.7
> 34	8.8	8.5

Sources:

Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Statistics Canada, Births and Deaths, 1997 (shelf tables).

Figure 17.
Pre-term Birth Rate (per 100 Live Births),
Alberta, 1985 to 1999

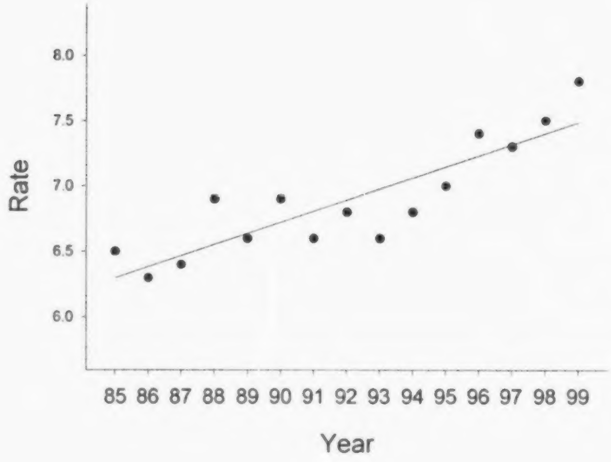
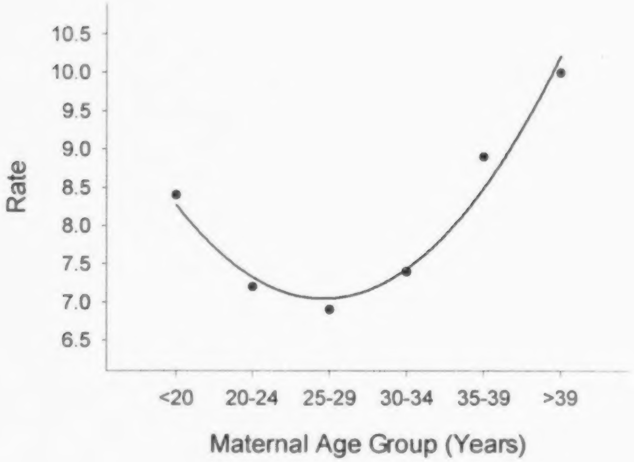
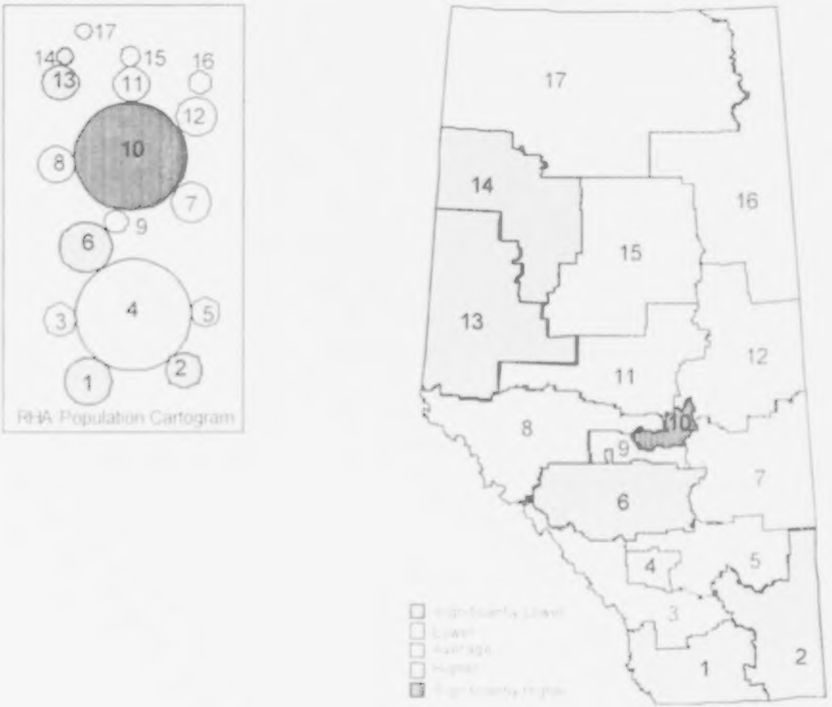


Figure 18.
Pre-term Birth Rate (per 100 Live Births)
by Maternal Age Group, Alberta,
1997 to 1999 combined



Map 6 Pre-term Birth Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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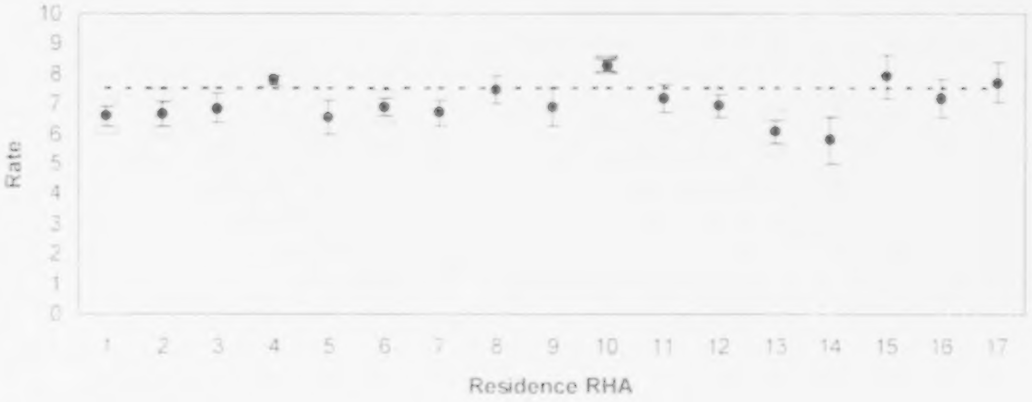
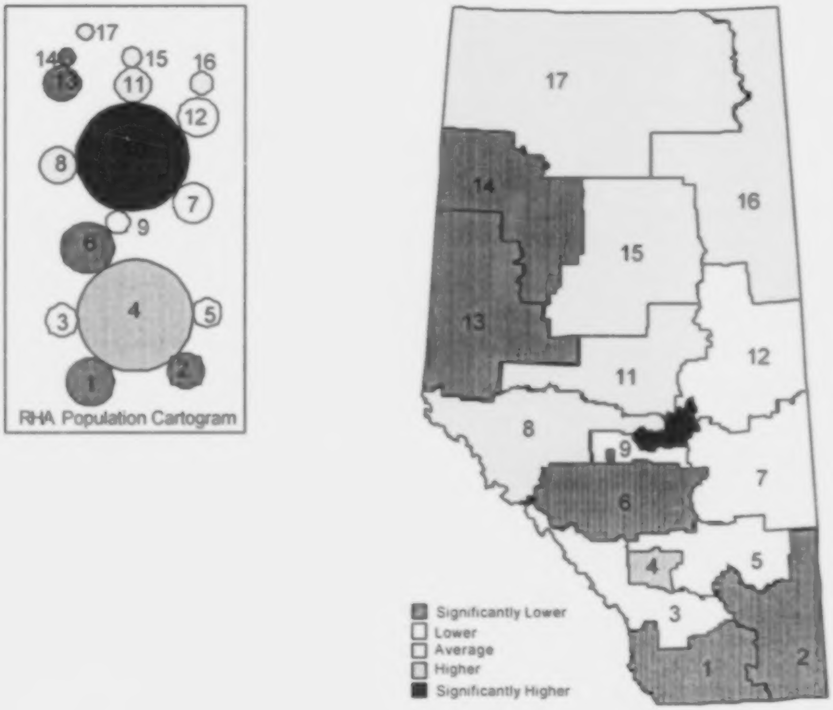


Map 6. Pre-term Birth Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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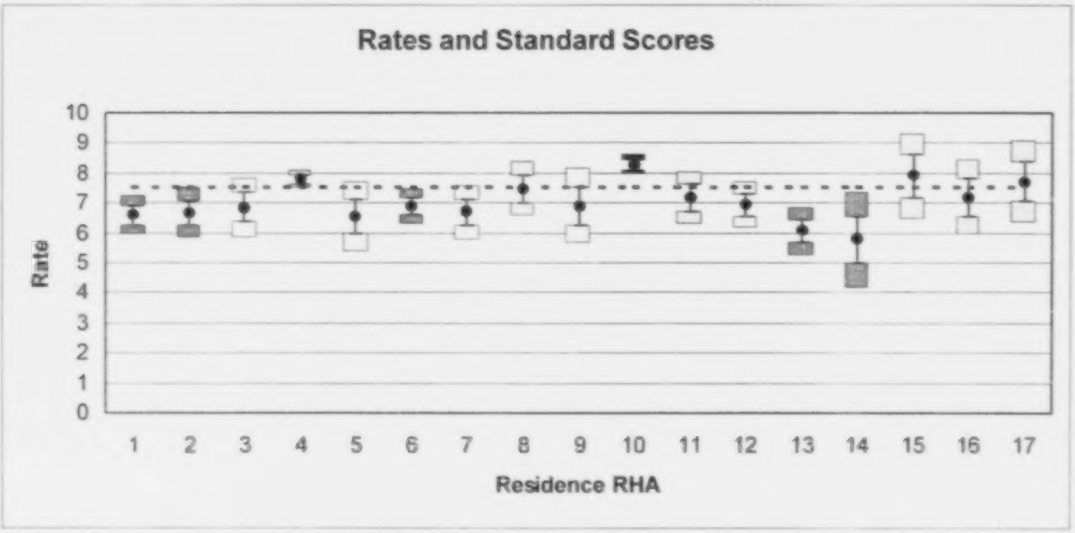


Multiple Births

- A multiple pregnancy occurs when a woman is pregnant with more than one fetus, a multiple birth occurs when more than one infant is born (whether live or stillbirth).
- Multiple pregnancy is associated with a higher incidence of maternal hypertension, post-partum hemorrhage, and cesarean section (Senat, Ancel, Bouvier-Colle, & Breart, 1998) and higher rates of intrauterine growth restriction and fetal death (Alexander, Kogan, Martin, & Papiernik, 1998).
- Multiple births are also more likely to be pre-term and result in low birth weight infants (Tough, Svenson, & Schopflocher, 1999).
- Increasing multiple birth rates are thought to be a function of both increasing maternal age and increasing use of fertility-enhancing drugs (Luke, 1998; Alexander, Kogan, Martin, & Papiernik, 1998). Multiple births are much more likely with in vitro fertilization than without in vitro fertilization (Tough, Greene, Svenson, & Belik, 2000).
- The Society of Obstetrics and Gynecology (SOGC) issued a consensus statement on the Management of Twin Pregnancies (Part I & II) in July and August of 2000. Part I deals with five areas of priority, listed below. Part II focuses on the impact of multiples – the incidence, perinatal mortality rate, social and financial impact, the role of assisted reproduction, and health promotion programs.
    - Multiple Births 0 – 20 weeks. – Recommendations for early ultrasound and genetic counseling.
    - Preterm Labour Prevention.
    - Fetal Growth in Multiples.
    - Labour Management and the delivery of the second twin – the evidence and recommendations.
    - Special Twin Circumstances – guidelines for diagnosis and management (Twin-Twin transfusion, monoamniotic pregnancies).
- **Multiple pregnancies**, **multiple births** and **perinatal deaths of multiple births** are detailed for 1998 for each of the RHAs in Table A31. Time trends for multiple pregnancies, multiple births, and perinatal deaths of multiple births are shown in Table A32.
    - Amongst women with twin pregnancies who had a stillbirth or neonatal death in 1998, 75.0% delivered at less than 32 weeks gestation, and 84.3% delivered at less than 37 weeks. For singleton pregnancies with a stillbirth or neonatal death, the respective rates are 60.4% and 75.6%.
    - The rate of twin stillbirth and neonatal deaths with birth weights of less than 2500 grams was 90.6%; 75.0% were less than 1000 grams, and 37.5 % were less than 500 grams.
- The **multiple birth rate** (per 100 live births) fluctuated between 1.9 and 2.1 from 1985 to 1991, between 2.2 and 2.3 from 1992 to 1995, and increased more obviously from 1996. The rate was 2.7 in 1999 (see Table A1 and Figure 19). The linear increase from 1985 to 1999 is a statistically significant trend.
    - Both **Canada** and Alberta had multiple birth rates of 2.5 per 100 live births in 1997 (Statistics Canada, 1999).
    - In 1999, 96.9% of multiple live births were **twin** births and the remaining 3.1% were **triplet** births (see Table A33).
- Multiple births for each of the **residence and facility RHAs** are detailed in Table A34. Rates are not provided for these frequencies, as the numbers are too small in many cases to provide reliable estimates of rates.
    - Combined data for 1997 to 1999 for **residence RHAs** show that multiple birth rates do vary across RHAs (see Table A35). RHAs 4 and 8 had multiple birth rates that were significantly higher than the provincial average, while the multiple birth rate was significantly lower than the provincial average in RHAs 12 and 14 (see Map 7).
    - The **facility RHA** for delivery was RHA 4 or RHA 10 for 79.0% of women experiencing live multiple births in Alberta from 1997 to 1999. However, only 59.2% of women having multiple births during that period actually lived in RHA 4 or RHA 10 (see Table A35). It is

common for women expecting multiple births to travel to take advantage of the specialized facilities available in these centres. Rates are not provided for the facility RHA data, as the number of multiple births in many of the RHAs is very low.

- The multiple birth rate varies with **maternal age**; rates are provided in Table A36. Rates are not provided for mothers over 39 years prior to 1997, as there were too few multiple births in this age group to provide reliable rate estimates.
  - The increase in overall multiple birth rate that is evident over the last several years appears to be confined to mothers aged 25 years and over; linear trends are significant only for the 25-29, 30-34 and 35-39 age groups.
  - There is a clear linear trend toward increasing multiple birth rate with increasing age. Figure 20 shows this significant trend for 1997 to 1999 combined.
- Multiple births are much more likely to be **low birth weight** or **pre-term** than singleton births (see Table A37).
  - In 1999, 49.6% of multiple births were low birth weight, which contrasts with the 4.6% of singleton births that were low birth weight.
    - The **average birth weight** for singleton births in 1999 was 3,415 grams, while the average for multiple births was 2,401 grams.
  - In 1999, 6.5% of singleton births and 52.8% of multiple births were pre-term.
    - The **average gestational age** for singleton births was 39.1 weeks, while the average for multiple births was 35.4 weeks.
- **Stillbirth rates** are higher for multiple births than for singleton births (see Table A37)
  - The stillbirth rate (per 1,000 total births) was 6.5 for 1985 and 1999 combined. The rate was 5.9 for singleton births, and 23.3 for multiple births. Thus multiple births are almost four times more likely than singleton births to result in a stillbirth.

Figure 19.
Multiple Birth Rate (per 100 Live Births),
Alberta, 1985 to 1999

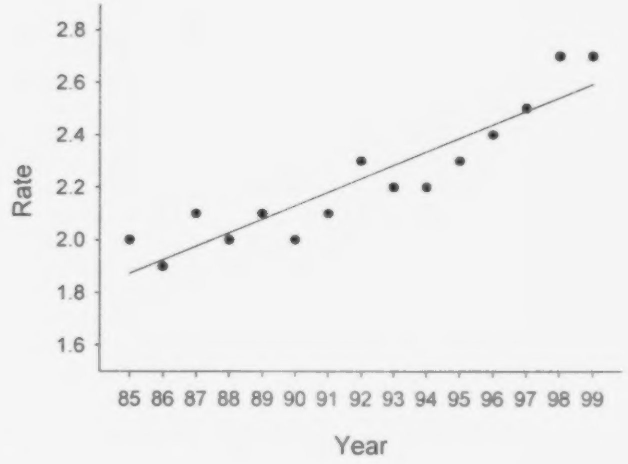
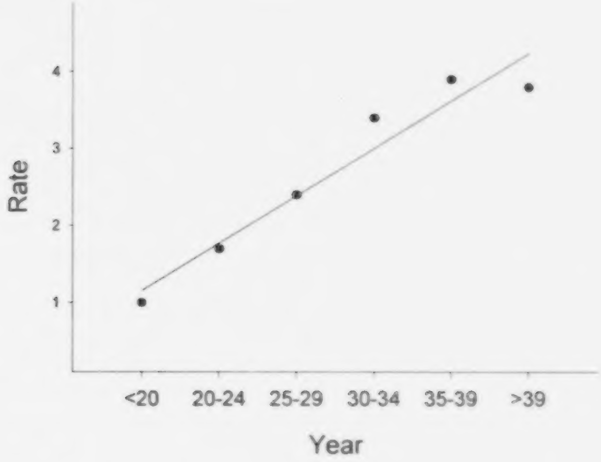
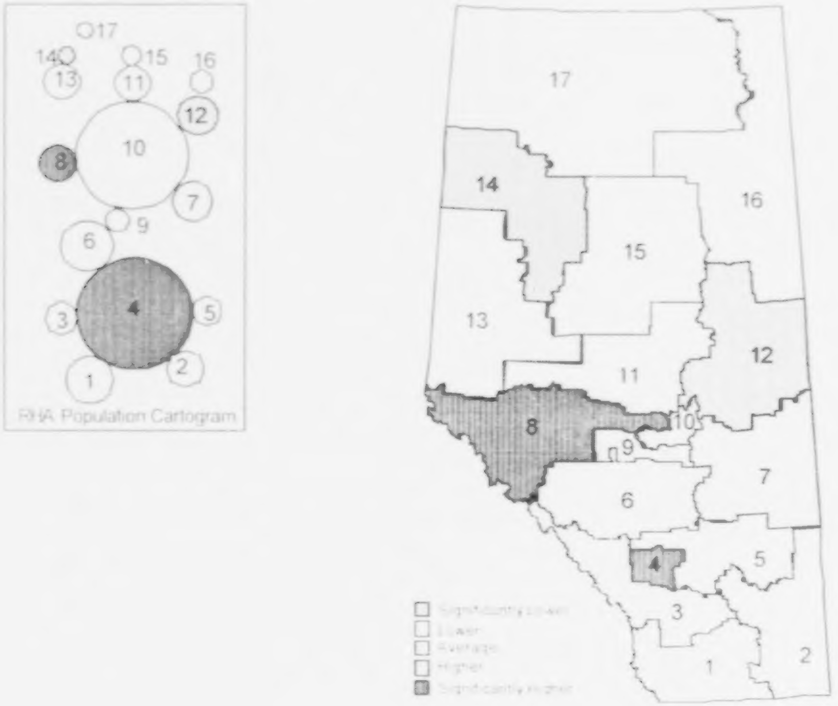


Figure 20.
Multiple Birth Rate (per 100 Live Births)
by Maternal Age Group, Alberta,
1997 to 1999 Combined



Map 7. Multiple Birth Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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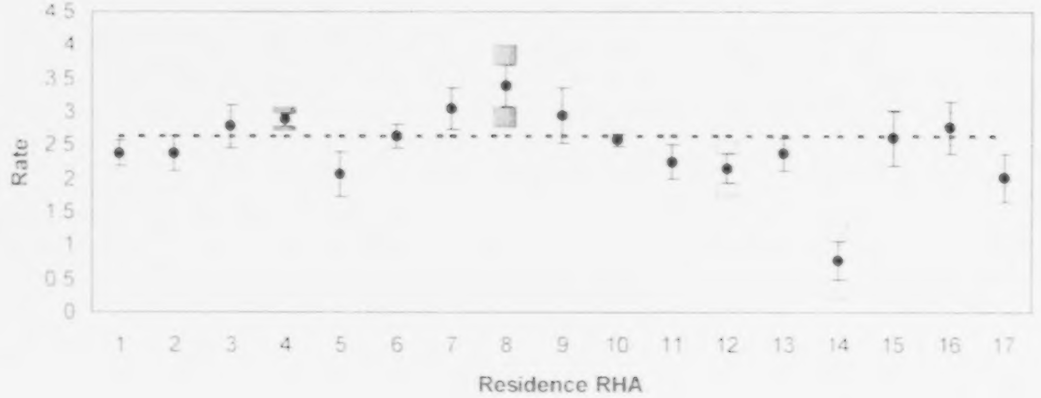
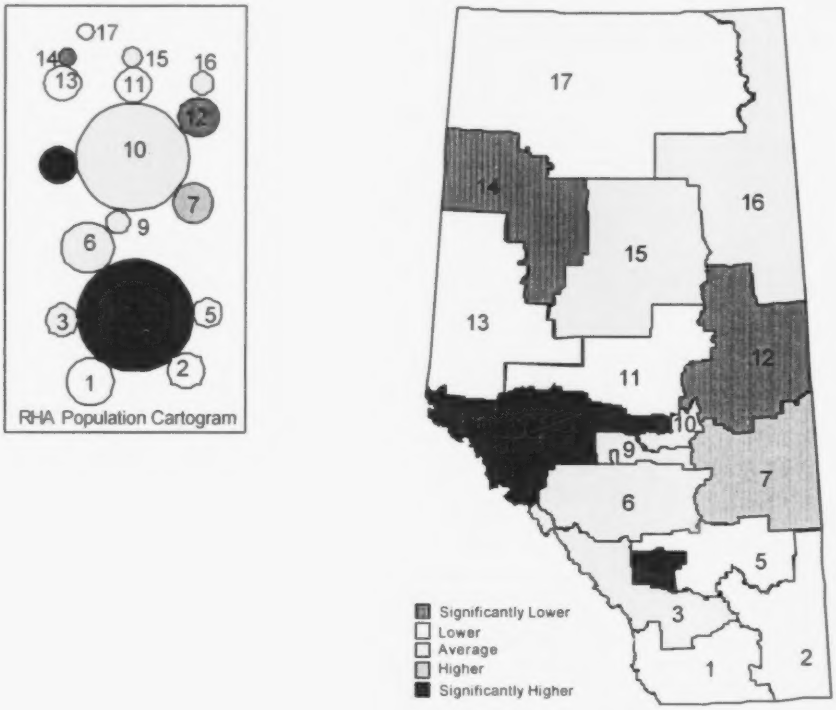

Rates and Standard Scores

Map 7. Multiple Birth Rate (per 100 Live Births) by Residence RHA, Alberta, 1997 - 1999 Combined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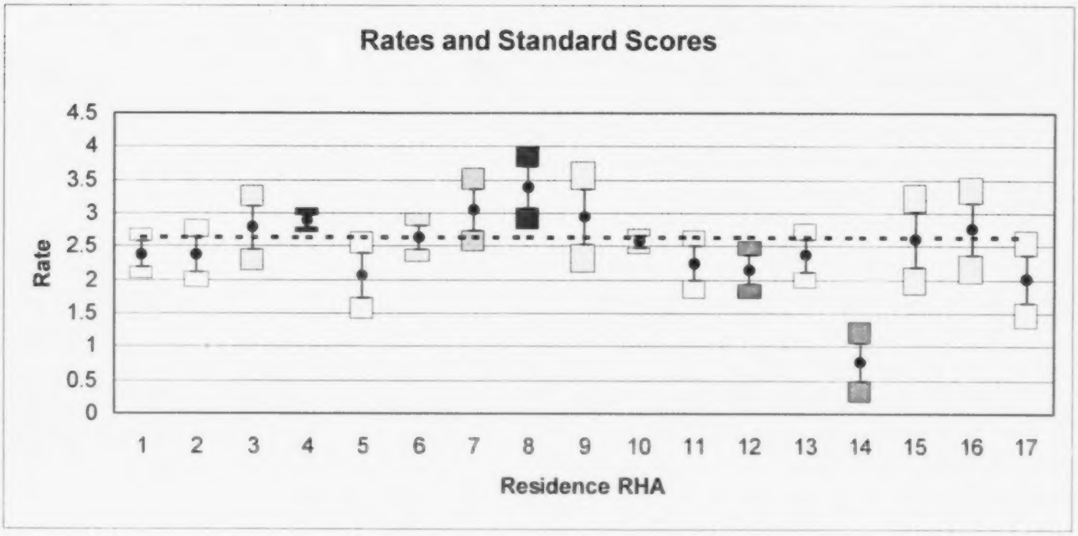


Maternal Behaviours

Risk Factors

Smoking

- Table A38 contains data on smoking among women who gave birth to a live infant in Alberta between 1997 and 1999.
- 26.4% of Alberta women who gave birth to a live infant between 1997 and 1999 smoked at some point during pregnancy.
    - 89.0% of smokers smoked throughout the pregnancy, and 11% **quit** during pregnancy.
- For the purposes of the following analyses, "smokers" are women who smoked throughout pregnancy, excluding those who quit smoking at some point during pregnancy. "Non-smokers" did not smoke at all during pregnancy. Table A39 provides separate rates on a number of indicators for women who smoked throughout pregnancy, women who quit during pregnancy, women who *either* smoked or quit during pregnancy, and women who did not smoke during pregnancy.
- Smokers tend to be younger than non-smoking mothers. **Average maternal age** for smokers was 26.0 years; the average age for non-smoking mothers was 29.0 years (see Table A39).
- Babies born to smokers were smaller than babies born to non-smokers (see Table A39).
    - **Mean birth weight** for babies born to smokers was 3,241 grams, compared to 3,424 grams for babies born to non-smokers, a difference of 183 grams.
    - The **low birth weight rate** for smokers was 9.7 (per 100 live births); the rate for non-smokers was 5.4.
    - The **small for gestational age rate** was 16.2 (per 100 live births) for babies born to smokers, and 7.6 for babies born to non-smokers.
- Smokers were more likely to give birth to a pre-term infant than were non-smokers. The **pre-term birth rate** for smokers was 9.9 (per 100 live births), while the rate was 7.4 for non-smokers (see Table A39).

Alcohol consumption

- Tables A38 and A39 contain data on alcohol consumption among women who gave birth to a live infant in Alberta between 1997 and 1999.
- 4.6% of women consumed alcohol during pregnancy from 1997 to 1999.
- As with smoking, mothers who consume alcohol during pregnancy tend to be younger than mothers who do not consume alcohol. **Mean maternal age** for mothers who consumed alcohol during pregnancy was 26.9 years, compared with 28.2 years for those who did not consume alcohol.
- **Mean birth weight** was 3,315 grams for babies born to mothers who drank alcohol during pregnancy, compared with 3,384 for babies born to mothers who did not drink alcohol.
- The **low birth weight** rate was 9.3 (per 100 live births) for babies with mothers who drank alcohol during pregnancy, and 6.2 for those babies whose mothers did not drink alcohol.
- The **small for gestational age rate** was 13.3 (per 100 live births) for babies with mothers who consumed alcohol during pregnancy, and 9.3 for babies with mothers who did not consume alcohol.
- **Pre-term births** occurred at a rate of 10.6 (per 100 live births) amongst babies of women who drank alcohol during pregnancy, and at a rate of 7.9 for babies of women who did not drink alcohol.

Use of street drugs

- Tables A38 and A39 contain data on street drug use among women who gave birth to a live infant in Alberta between 1997 and 1999.

- 1.5% of Alberta women who had a live birth between 1997 and 1999 used street drugs during pregnancy.
- As with smoking and alcohol use, mothers using street drugs tended to be younger than those not using street drugs. The **mean maternal age** for users of street drugs was 23.7 years, while mean maternal age for non-users was 28.3 years.
- **Mean birth weight** was 3,148 grams for street drug users, and 237 grams higher (3,385 grams) for non-users of street drugs.
- **Low birth weight** babies occurred at a rate of 15.7 (per 100 live births) to users of street drugs, compared with a rate of 6.2 for non-users.
- **Small for gestational age** births comprised 18.4 out of every 100 live births for street drug users, and 9.3 for non-users.
- The **pre-term birth** rate was 17.4 (per 100 live births) for users of street drugs. The rate for non-users was 7.9.

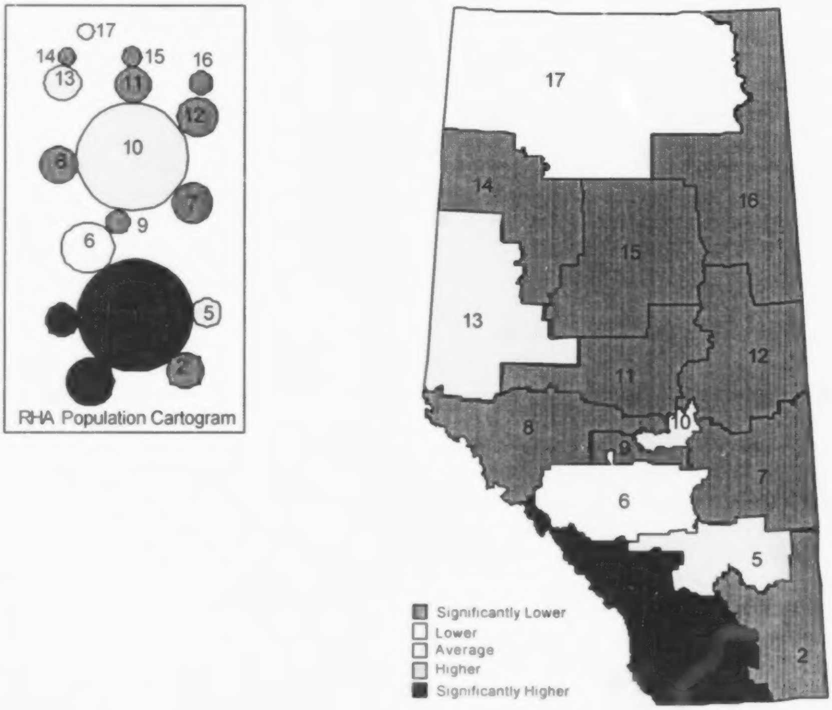
Prenatal Classes

- The prenatal class attendance rate for mothers giving birth to live infants between 1997 and 1999 was 33.2%. Of those attending prenatal classes, 78.7% were first-time mothers.
- Table A40 contains information on a number of indicators for mothers attending prenatal classes and mothers not attending.
- **Mean maternal age** for those attending classes was 27.6 years, compared with a mean maternal age of 28.4 years for those not attending .
- **Mean birth weight** for infants whose mothers attended prenatal classes was 3410 grams, while the mean for infants whose mothers did not attend was 3368 grams.
- The **low birth weight rate** was 4.8 (per 100 live births) for infants with mothers who attended prenatal classes and 7.3 for infants with mothers who did not attend.
- For mothers attending prenatal classes, the **small for gestational age rate** was 9.0 (per 100 live births), compared with a rate of 9.6 for mothers not attending.
- The **pre-term birth rate** (per 100 live births) was 6.4 for infants whose mothers attended prenatal classes, and 9.0 for infants whose mothers did not attend.

Breastfeeding Initiation

- Breastfeeding benefits are well-documented, including (but not limited to) protection from infection and enhanced cognitive development in infants, and reduced post-partum bleeding and delayed resumption of ovulation in mothers (Health Canada, 2000a).
- Table A41 shows breastfeeding upon discharge by **facility RHA** from 1996 to 1998. Not all of the hospitals within a region reported on women's breastfeeding practices. Those hospitals that did not report have been excluded from the totals within those regions.
  - Map 8 demonstrates that breastfeeding initiation rates for 1996 to 1998 combined were higher than the provincial average for women delivering in RHAs 1, 3, and 4, and lower than the provincial average in RHAs 2, 7, 8, 9, 11, 12, 14, 15, and 16.
- The provincial **breastfeeding initiation rate** remained constant across the three years, at 83.1% in 1996, 84.1% in 1997, and 85.3% in 1998.
- In **Canada** in 1997, the breastfeeding initiation rate was 76.7 (per 100 children).

Map 8. Breastfeeding Initiation Rates (per 100 Women Delivering) by Facility RHA, Alberta, 1996 - 1998 Combined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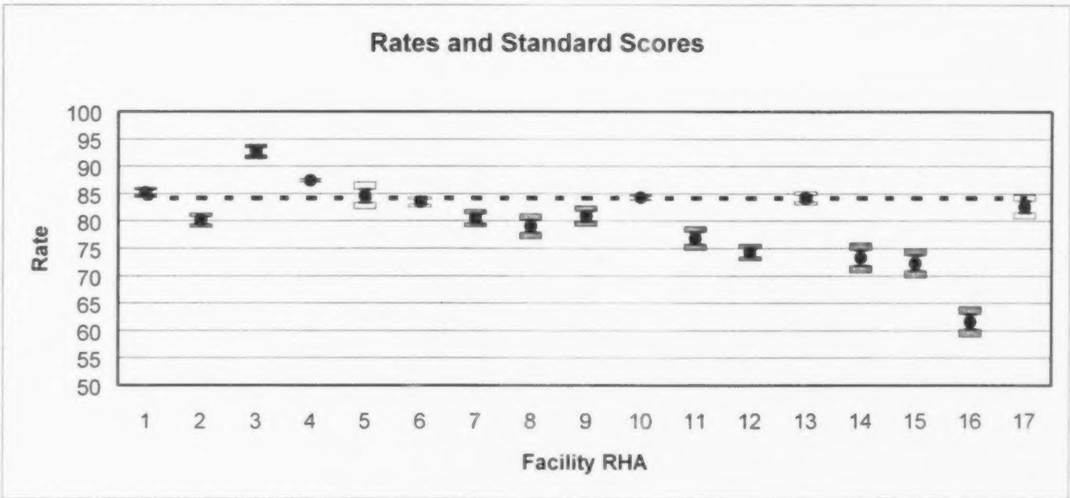
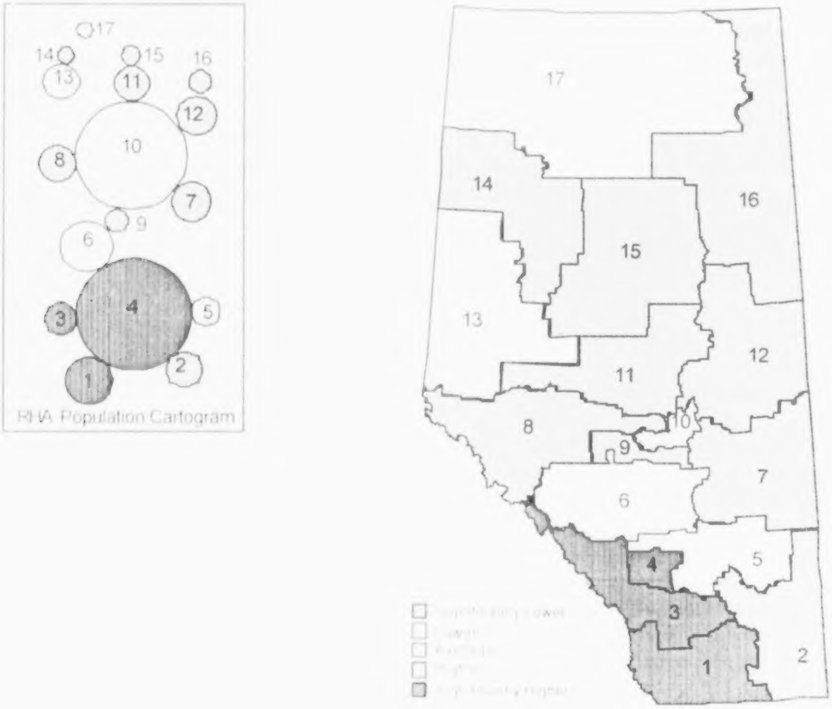


Map 8. Breastfeeding Initiation Rates (per 100 Women Delivering) by Facility RHA, Alberta, 1996 - 1998 Combined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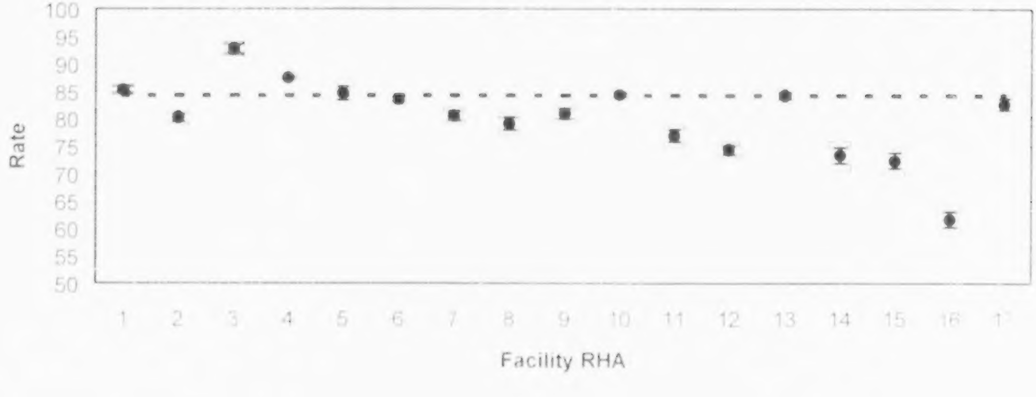
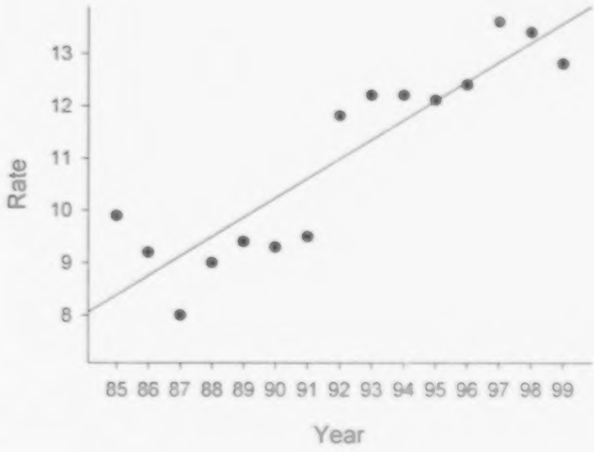


Reproductive Care Services

Induced Abortions

- These are pregnancies terminated by artificial induction.
- The **induced abortion rate** (per 1,000 women between 15 and 49) was 12.8 in 1999 (see Table A1 and Figure 21). The rate for **Canada** in 1997 was 16.8 (Health Canada, 2000a), while the Alberta rate was 13.6.
- The **age-specific induced abortion rate** (per 1,000 women in each age group) showed an increasing linear trend from 1985 to 1999 for all age groups between 15 and 44 years (see Table A42). There was no significant trend for women younger than 15 or older than 44.
  - Women between 18 and 24 years of age had the highest induced abortion rates.
- **Private abortion clinics** opened in Alberta in 1991.
  - In 1996, private abortion clinics became fully funded by RHAs, and an increase in the percentage of abortions performed in clinics is evident from 1996 (see Table A43).
  - In 1999, 41.9% of induced abortions were performed in private clinics.
- The majority of induced abortions were performed in Edmonton and Calgary.
  - In 1999, 42.6% of induced abortions were performed in Edmonton and 53.9% in Calgary (see Table A44). 3.5% of induced abortions occurred in rural hospitals in 1999.
- Induced abortions and induced abortion rates by **residence RHA** appear in Table A45.
  - For 1997 to 1999 combined, induced abortion rates were higher than the provincial average in RHAs 4 and 10, and lower than the provincial average in all other RHAs, with the exception of RHA 3, where rates did not differ from the provincial average.
- In 1999, 86.8% of induced abortions occurred prior to 13 weeks **gestation** (see Table A46 for gestational age data for 1997 to 1999).
  - 83.6% of induced abortions in private clinics occurred before 13 weeks gestation, while 89.2% of induced abortions in hospitals occurred before 13 weeks (see Table A47).

Figure 21.
Induced Abortion Rate (per 1,000 Women Aged 15-49),
Alberta, 1985 - 1999

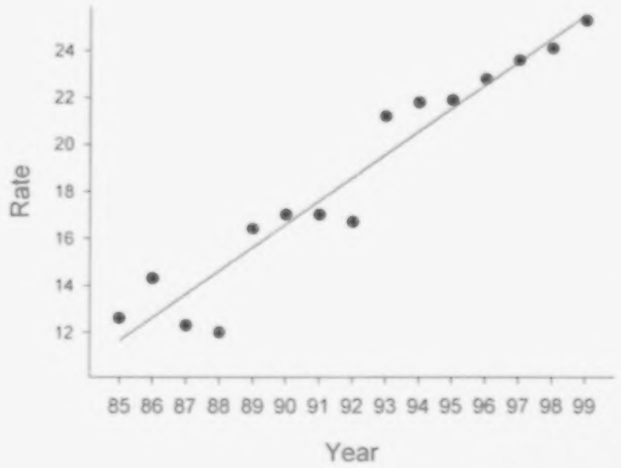


Deliveries

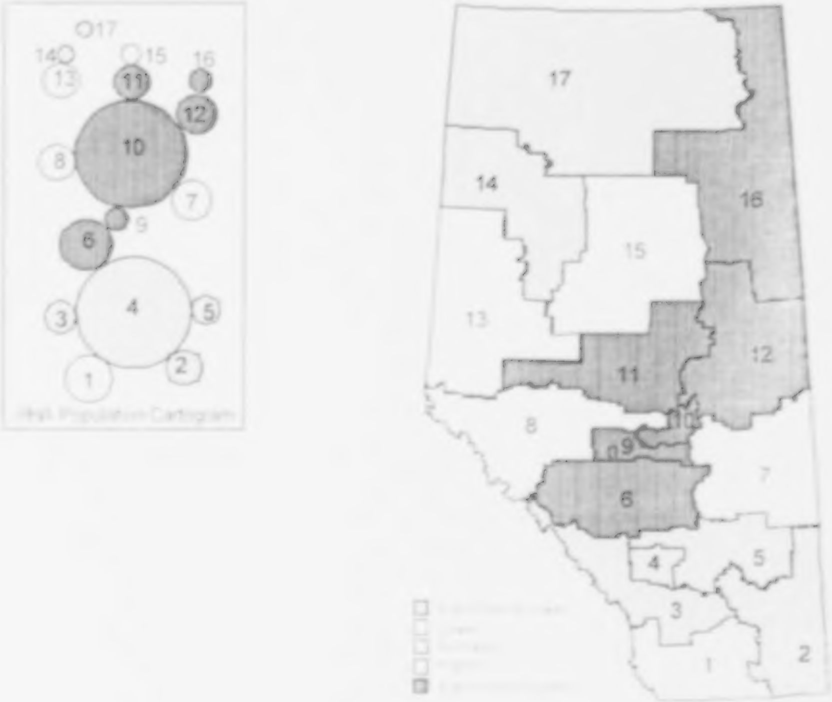
Type of Labour

- Medical induction includes induction with oxytocin and prostaglandins. Surgical induction includes artificial rupture of membranes and induction by cervical dilation.
- In 1999, the **total induction rate** (per 100 hospital deliveries) was 25.3. There has been a dramatic increase in induction rates over the last fifteen years (see Table A48 and Figure 22). The fifteen-year low was 12.0 in 1988.
  - The increase in total inductions is largely due to increasing **medical inductions**. The medical induction rate stood at 19.3 in 1999, which was the fifteen-year high. The fifteen-year low was 8.2 in 1988.
  - **Surgical induction rates** have been more variable. They were at their lowest in the late 1980's, were higher from 1993 to 1995, then reached the fifteen-year low of 1.5% in 1998. The 1999 rate was 1.6%.
  - **Combined induction rates** have remained fairly stable over the last seven years. The 1999 rate was 4.4%, compared with the fifteen-year low of 1.1 in 1987.
  - In 1999, 74.7% of hospital deliveries occurred after **spontaneous labours**; this is the lowest rate in the fifteen-year study period. The spontaneous labour rate was at its highest in the late 1980's, peaking at 88.0% in 1988.
- In **Canada** in 1997, 18.5% of deliveries were induced (Health Canada, 2000a), compared with 23.6% in Alberta.
- There are regional differences in total induction rates. See Table A49 for induction rates by **residence RHA** for 1997 to 1999.
  - When the data for 1997 to 1999 are combined, RHAs 6, 9, 10, 11, 12, and 16 have higher induction rates than the provincial average, while RHAs 2, 3, 4, 5, 14, and 17 have lower than average rates (see Map 9).

Figure 22.
Total Induction Rate (per 100 Hospital Deliveries),
Alberta, 1985 to 1999



Map 9. Total Induction Rate (per 100 Hospital Deliveries) by Residence RHA, Alberta, 1997 - 1999 Combined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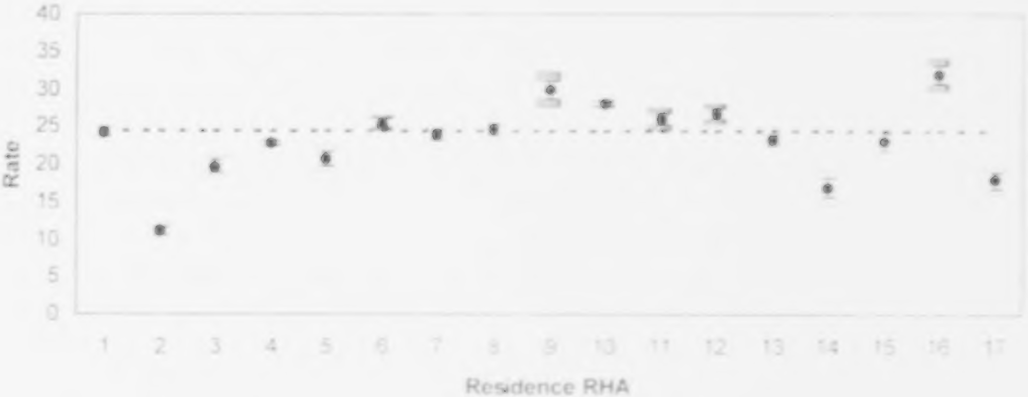
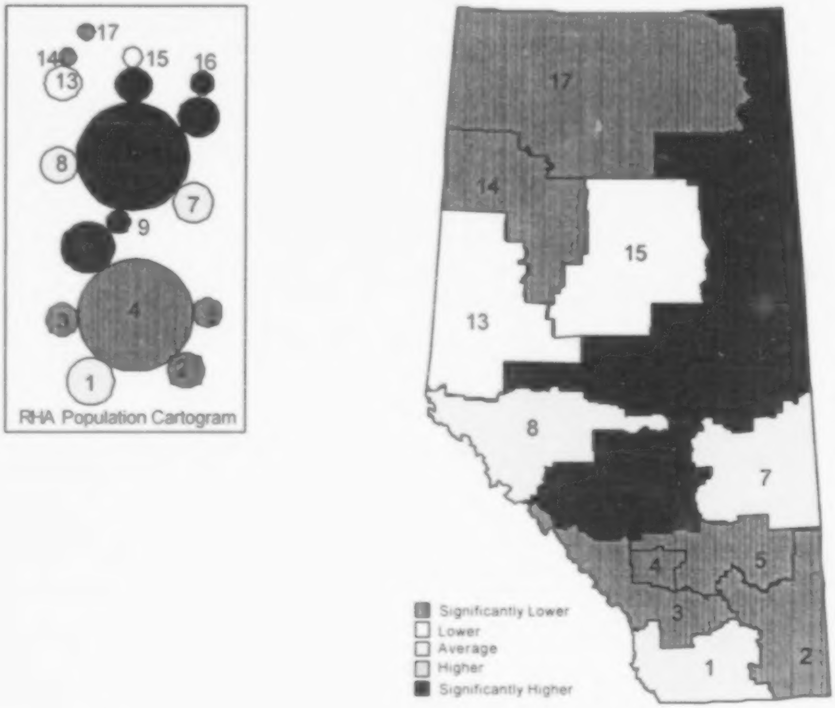


Map 9. Total Induction Rate (per 100 Hospital Deliveries) by Residence RHA, Alberta, 1997 - 1999 Combined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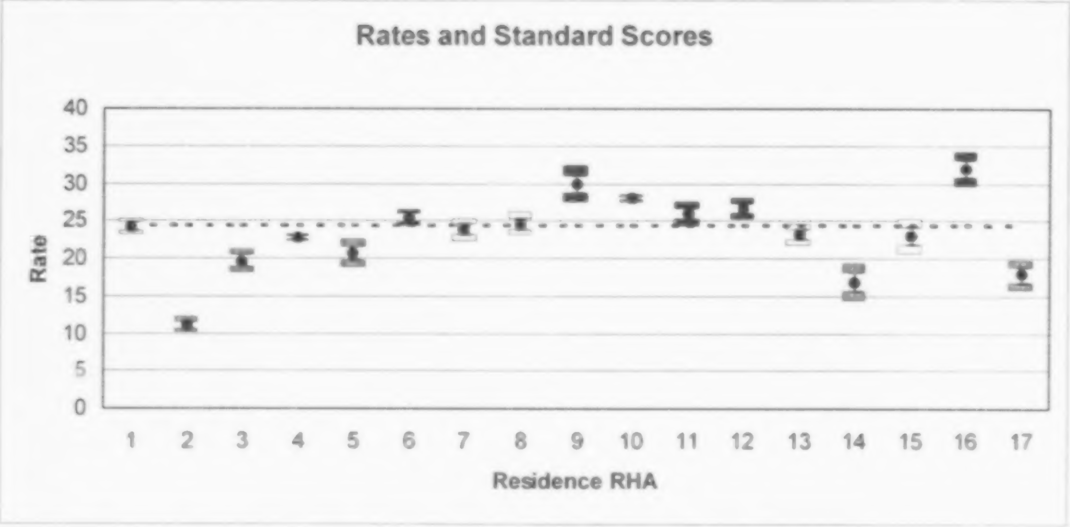
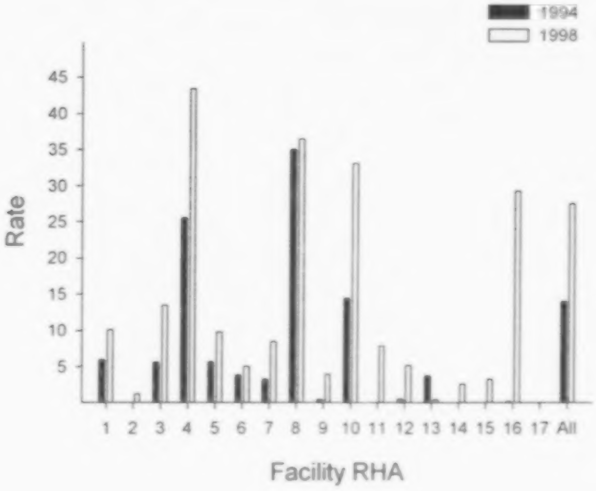


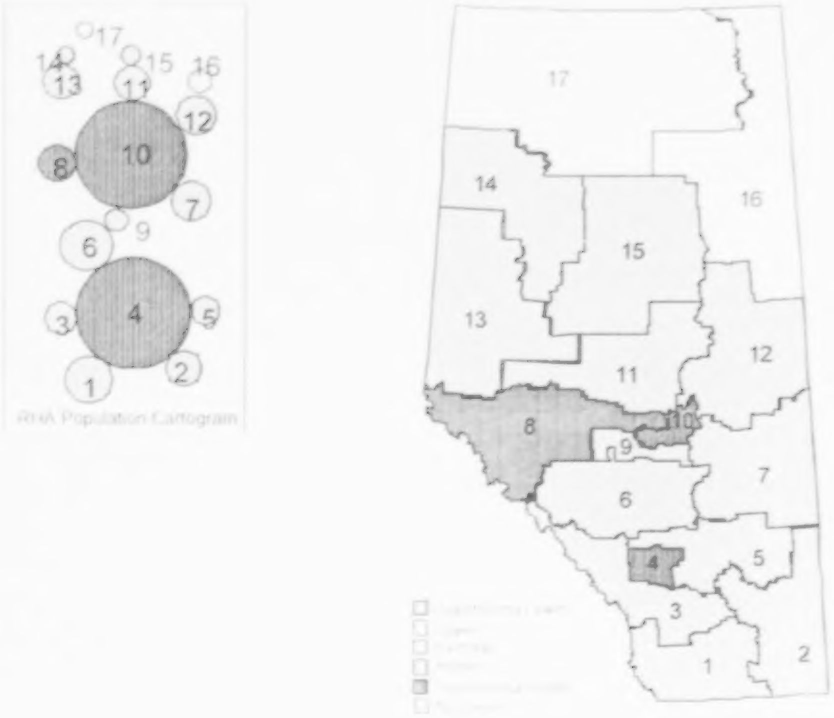
Epidural Analgesia

- In 1994, an Ad Hoc Committee of the AMA Health Issues Council, in collaboration with the Committee on Reproductive Care, assessed the use of epidural analgesia in labour and delivery in Alberta (Alberta Medical Association, 1996).
- The provincial epidural analgesia rate was 27.5 (per 100 hospital deliveries) in 1998, compared with 14.0 in 1994.Table A50 and Figure 23 show the 1994 rates for **regional health authorities**, compared to those of 1998. Epidural anagesia increased in most regions.
  - Map 10 shows the epidural rates (per 100 pregnancies) for 1998 for the **facility RHAs**. The rates were higher than the provincial average in RHAs 4, 8, and 10, and lower in RHAs 1, 2, 3, 5, 6, 7, 9, 11, 12, 13, 14, and 15. There were no cases of epidural analgesia for labour and delivery reported in RHA 17, so no rate could be calculated.
  - In 1994, epidural rate in RHA 4 was 25.6%, almost double that RHA 10, which was 14.5%. As of 1998, RHA 10 had increased its rate significantly, to 33.1%; the 1998 rate for RHA 4 was 43.4%. RHAs 8 and 16 had epidural rates similar to those in the larger urban centres, at 36.5% and 29.3%, respectively.
- Table A51 shows epidural analgesia use in labour and delivery by **level of hospital** for 1998 (see reference Health Canada 2000b for definition on levels of hospital care).
  - The highest epidural rate amongst urban hospitals was 53.0% at the Foothills Hospital in Calgary; the rate for this hospital was the same in 1994. Level I centers, and Level II centers not in Calgary or Edmonton, had the lowest rates.
- The Ad Hoc Committee, upon surveying hospitals in 1994, cited **reasons for a lack of epidural services** for hospitals with 100 - 500 deliveries. These included staff shortage, training, workload and payment for the service.
  - The availability of epidural analgesia was not totally dependent on hospital size; some hospitals with epidural service for anesthesia did not provide epidural analgesia service.
    - In 1998, five hospitals reported epidural anesthesia for cesarean sections but did not report epidural analgesia in labour.

Figure 23.
Epidural Analgesia in Labour and Delivery Rate
(per 100 Deliveries), Alberta, 1994 and 1998



Map 10. Epidural Analgesia Rates (per 100 Hospital Deliveries) by Facility RHA, Alberta, 1998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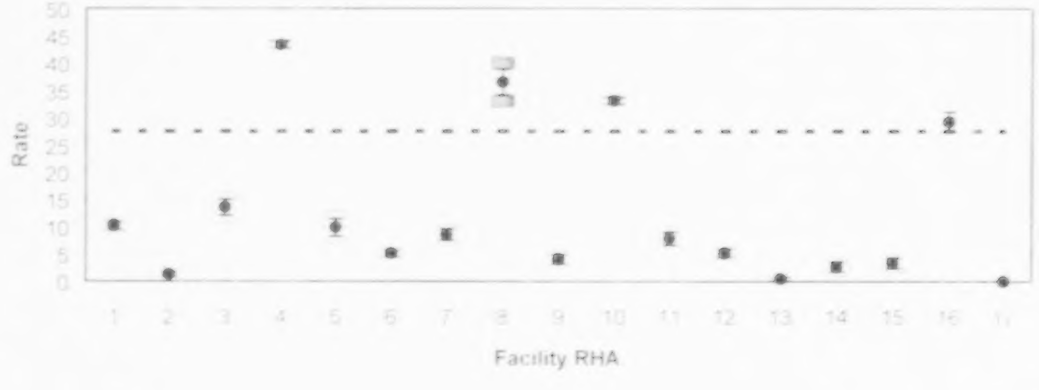
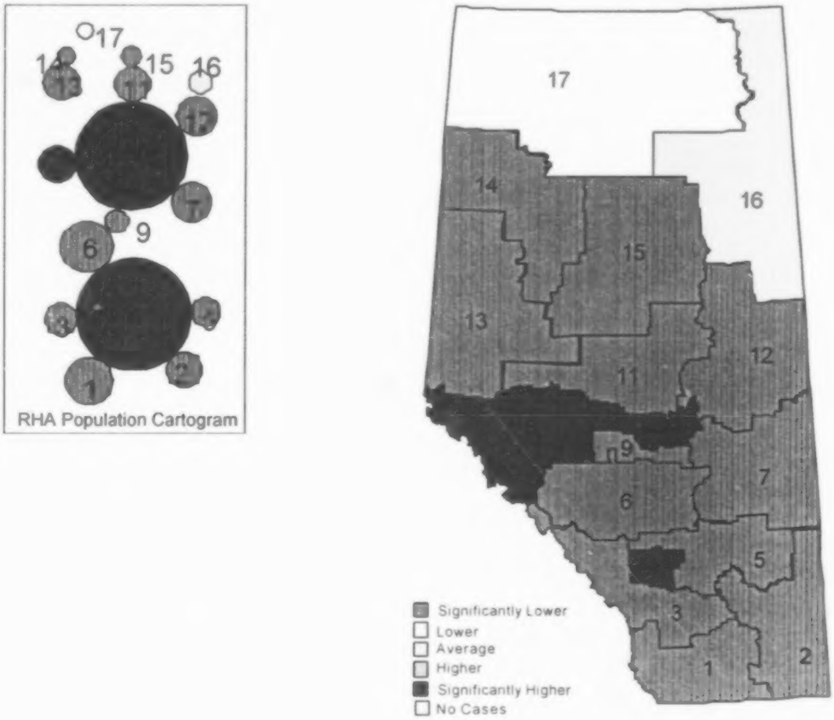


Map 10. Epidural Analgesia Rates (per 100 Hospital Deliveries) by Facility RHA, Alberta, 1998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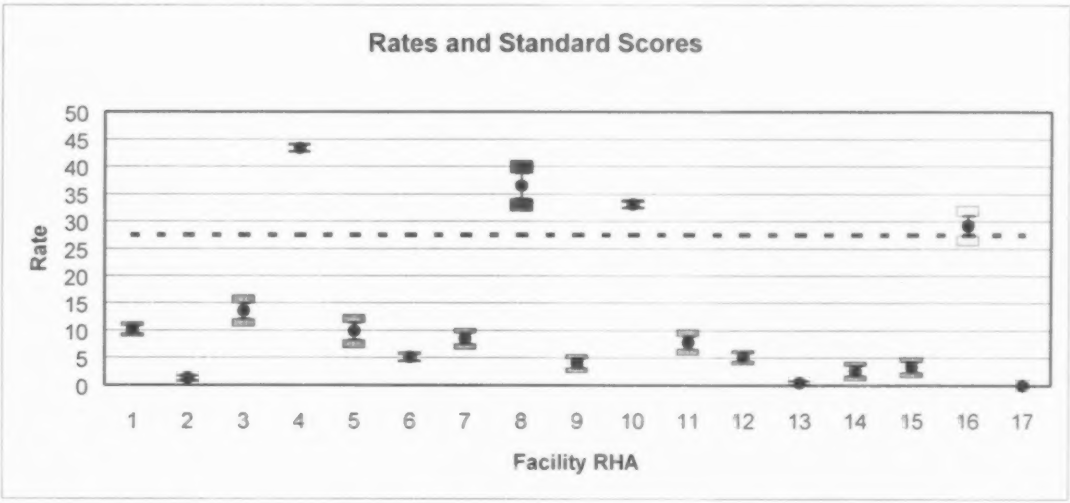
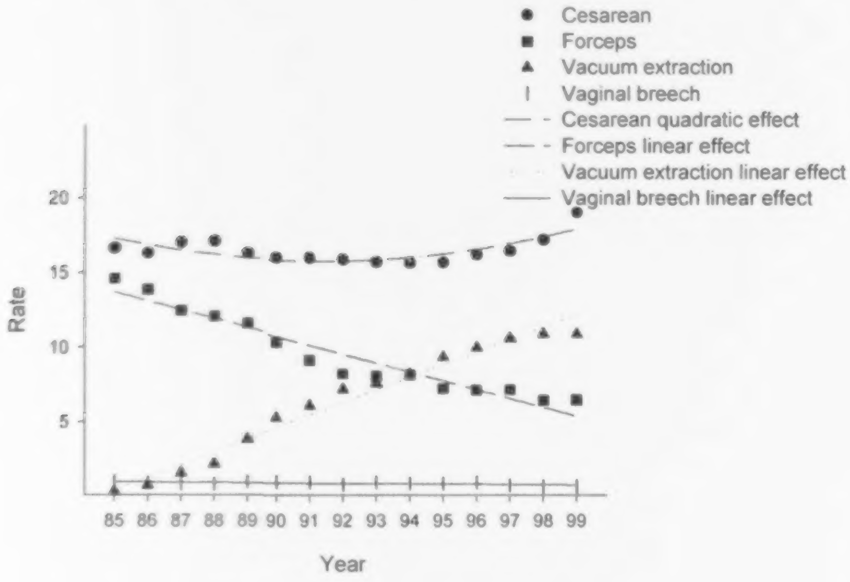


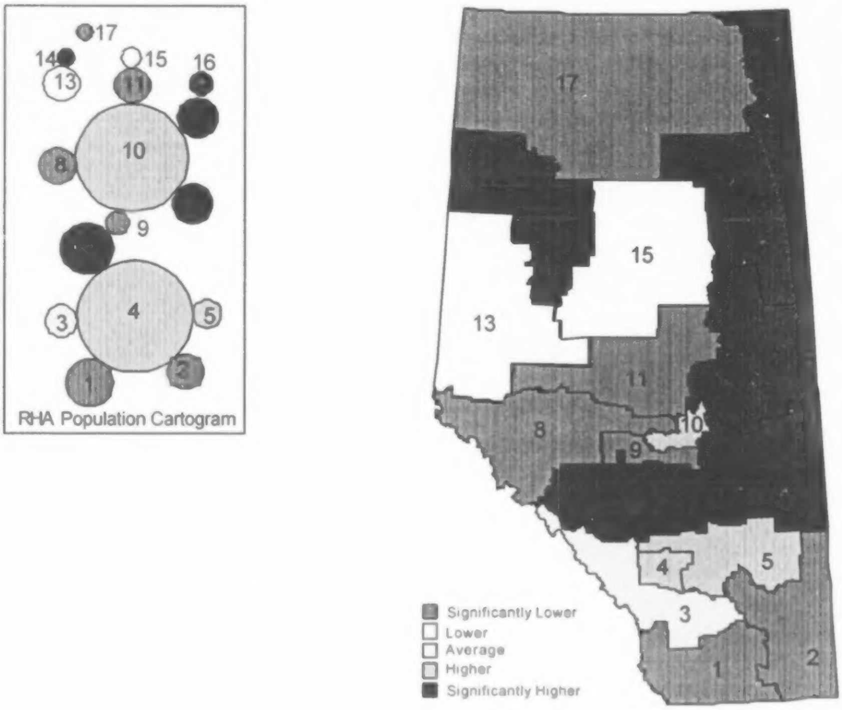
Method of Delivery

- Rates for cesarean section, forceps, vacuum extraction, and vaginal breech deliveries are shown in Figure 24.
- The **cesarean section rate** (per 100 hospital deliveries) decreased somewhat between 1990 and 1995, and has increased since then, resulting in a significant quadratic trend. The rate was 19.1 in 1999, the fifteen-year high (see Table A52).
    - When data for 1997 to 1999 are combined for **residence RHAs**, cesarean rates were higher than the provincial average in RHAs 6, 7, 12, 14, and 16, and lower than the provincial average in RHAs 1, 2, 8, 11, and 17 (see Map 11 and Table A53).
- The cesarean section rate in 1997 was 19.1 for all of **Canada** (Health Canada, 2000a) and 16.5 for Alberta.
- Table A54 provides **detailed data for cesarean sections** for each of the regional health authorities in 1998.
    - There was an overall provincial cesarean section rate of 17.0%, based on the total number of pregnancies delivering in Alberta. There were variations in cesarean rates between regions.
    - 65.8% of cesarean sections were primary cesarean sections.
    - In mothers who had previous cesarean sections, labour was attempted for 54.4% of deliveries. Of these attempted vaginal births after cesarean sections (VBAC's), 76.4% were successful.
    - The perinatal and neonatal combined death rate for cesarean sections was 8.9 (per 1,000 total births).
- Table A55 shows the cesarean section and VBAC rates for 1992 to 1998.
    - The cesarean section rate (per 100 mothers delivering) has gradually increased.
    - The VBAC and VBAC success rates show no significant time trends over the last seven years.
- Time trends for **forceps** and **vacuum extraction methods** are complementary: While forceps rates have steadily declined, vacuum extraction has become more common (see Table A52).
    - In 1999, 6.5% of deliveries were by forceps and 11% by vacuum extraction.
    - In 17.5% of deliveries in 1999, either forceps or vacuum extraction was used. This is the highest rate in fifteen years; the low was 14% in 1987.
    - As shown in Table A53, forceps and vacuum extraction rates vary with **residence RHA**. Combined data for 1997 to 1999 demonstrate that forceps rates were higher than the provincial average in RHAs 4, 10, and 16. Forceps rates were lower than average in RHAs 1, 2, 6, 8, 9, 11, 12, 13, 14, 15, and 17.
    - Vacuum extraction rates were higher than the provincial average in **residence RHAs** 4, 8, 10, 11, and 12, and lower in RHAs 1, 2, 6, 7, 13, 14, 15, and 16.

Figure 24.
Operative Deliveries (per 100 Hospital Births),
Alberta, 1985 - 1999



Map 11. Cesarean Section Rate (per 100 Hospital Deliveries) by Residence RHA, Alberta, 1997 – 1999 Combined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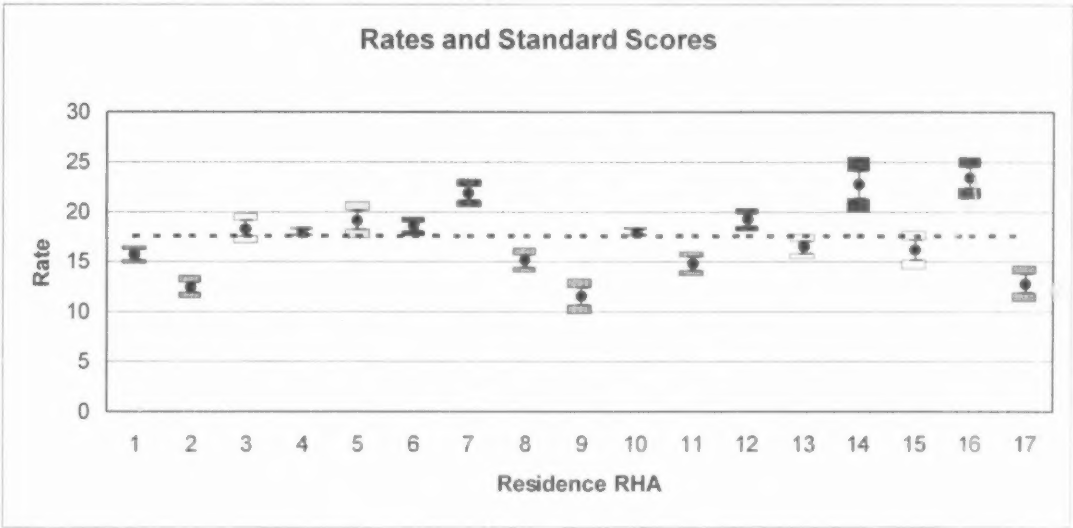
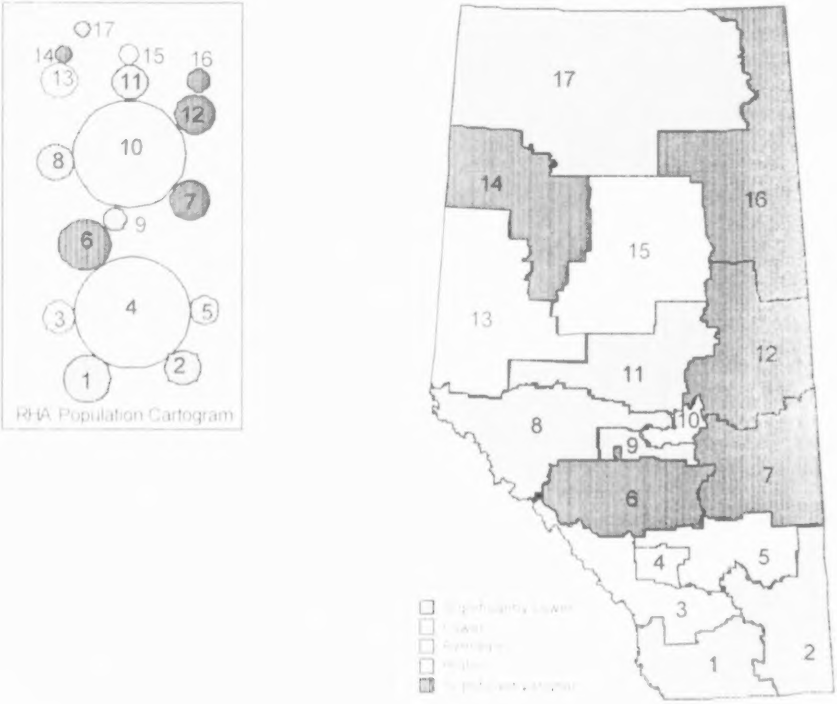


Map 11. Cesarean Section Rate (per 100 Hospital Deliveries) by Residence RHA, Alberta, 1997 – 1999 Combined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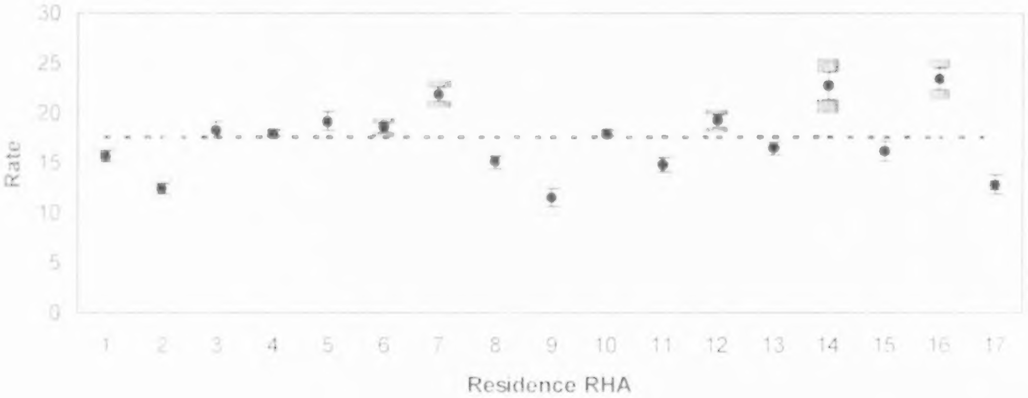

Rates and Standard Scores

Breech Deliveries

- Breech deliveries accounted for 4.8% of total births in 1998.
- Table A56 contains information about breech deliveries in 1998 by **level of hospital**.
    - 41.0% of breech deliveries were in level III hospitals, 40.8% in level II hospitals, and 18.1% in level I hospitals (see reference Health Canada 2000b for definition on levels of hospital care).
    - 62.1% of breech deliveries were by cesarean section and 37.9% were vaginal breech deliveries. Vaginal breech deliveries were least common in Level II hospitals.
- Table A57 describes **perinatal and neonatal mortality** by level of hospital for breech deliveries in 1998.
    - Breech delivery occurred in 25.5% of all stillbirths and 25.8% of all neonatal deaths.
    - The perinatal mortality rate for breech presentation was 42.5 (per 1,000 total breech births); when corrected for congenital anomalies, the rate was 40.9. The neonatal mortality rate for breech presentation was 19.0 (per 1,000 live breech births); when corrected for congenital anomalies, the rate was 11.9. *These rates must be interpreted with caution* due to the low number of cases involved.
    - Of breech presentations resulting in a stillbirth or neonatal death, 83.5% delivered vaginally and 16.5% delivered by cesarean section.
        - The perinatal mortality rate for vaginal breech births was 97.7 (per 1,000 total vaginal breech births); when corrected for congenital anomalies, the rate was 65.6. The neonatal mortality for vaginal breech births was 34.5 (per 1,000 live vaginal breech births); when corrected for congenital anomalies, the rate was 21.9 *These rates must be interpreted with caution* due to the low number of cases involved.
        - The perinatal mortality rate for cesarean breech births was 8.8 (per 1,000 total cesarean breech births); when corrected for congenital anomalies, the rate was 6.1. The neonatal mortality rate for cesarean breech births was 8.8 (per 1,000 live cesarean breech births); when corrected for congenital anomalies, the rate was 6.2. *These rates must be interpreted with caution* due to the low number of cases involved.
- Table A58 gives details for 1994 to 1998 on perinatal and neonatal mortality for breech deliveries.
- **Factors associated with breech perinatal and neonatal mortality** include birth weight, prematurity and anomalies.
    - 94.1% of breech presentation stillbirths and neonatal deaths involved a birth weight of less than 2500 grams.
        - Five breech deaths involved birth weights of 2500 grams or greater; one had an anomaly, one had asphyxia with severe hypoxic ischemic encephalopathy and intracranial hemorrhage, and three were classified as unknown (autopsies did question placental and cord problems but nothing definitive was found).
    - Prematurity (less than 37 weeks gestation) occurred in 92.9% of these deaths, with 83.5% less than 32 weeks gestation.
    - Anomalies were associated with 35.3% of breech presentation stillbirths and neonatal deaths.
    - 15.3% of breech presentation stillbirths and neonatal deaths occurred in multiple pregnancies.
- In September 2000 the SOGC produced an Interim Position Paper on the Management of Term Breech, following the analysis of an international study. Differences in perinatal mortality and complex neonatal morbidity were significant, with the interim analysis indicating outcome is better in the cesarean section group when compared to those undergoing a planned vaginal birth for the selected breech at term. A final report with detailed analysis of the study should be available soon. Until that time the SOGC recommends the following:
    - Physicians should inform all patients with term breech presentations of the results of this interim analysis of the term breech trial study.

- Individual physicians should address their own expertise and skills in the management of the term breech.
- Decisions about the method of delivery of the term breech should be made on an individual basis after full disclosure of the risk and benefits of cesarean and vaginal birth in the term breech presentation.

Mortality

Perinatal Mortality

- Perinatal mortality includes stillbirths and early neonatal deaths (deaths before seven days of age). A fetal death is registered as a stillbirth if delivery occurs at or after 20 weeks of pregnancy or if the fetal weight is 500 grams or greater and gestational age is not known.
- There is no significant time trend in the **perinatal mortality rate** in Alberta from 1985 to 1999 (see Table A1 and Figure 25). The rate for 1999 was 10.1 (per 1,000 total births). The rate for 1998 was only 7.8 due a low number of stillbirths, which appears to be anomalous. This rate will be watched closely for developing trends.
- The 1997 rate was 9.3 in **Canada** (Statistics Canada, 1999), and 9.8 in Alberta.
- Perinatal mortality rates by **birth weight** are provided for 1998 (Table A59) and 1994 to 1998 combined (Table A60, Figure 26). Rates decline with rising birth weight under 4,500 grams.
- Perinatal mortality rates by **gestational age** are provided for 1998 (Table A61) and for 1994 to 1998 combined (Table A62 and Figure 27). Perinatal mortality rates decline consistently with increasing gestational age up to 41 weeks
- Table A63 provides perinatal mortality rates by **maternal age** for 1998. Mothers aged 18-39 years had the lowest perinatal mortality rates.
- Perinatal mortality rates by **facility RHA** for 1998 for infants with birth weights 500 grams and over are provided in Table A64.
- Perinatal mortality rates by **level of hospital** for 1998 for infants with birth weights 500 grams and over are provided in Table A65 (see reference Health Canada 2000b for definition of levels of hospitals). Rates are highest in Level III hospitals.
- Table A66 provides **detailed information on perinatal deaths** by facility RHA for 1998.The perinatal mortality rate for birth weights 500 grams and over was 5.2; the rate for birth weights 1,000 grams and over was 3.4. These rates were 3.7 and 2.5, respectively, when corrected for congenital anomalies.

Figure 25.
Perinatal Mortality Rate (per 1,000 Total Births),
Alberta, 1985 to 1999

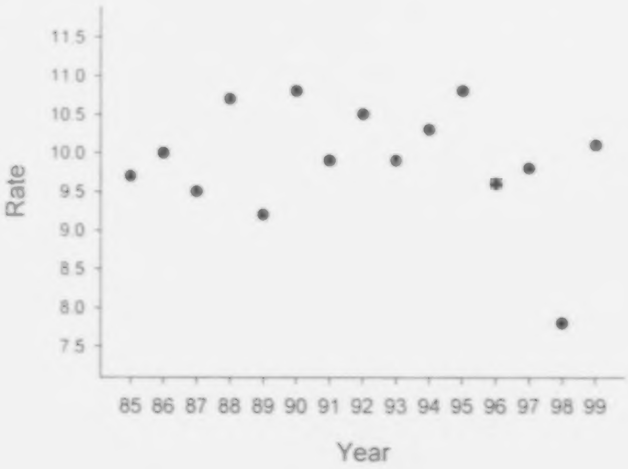


Figure 26.
Perinatal Mortality Rate (per 1,000 Total Births),
and Neonatal Mortality Rate (per 1,000 Live Births)
by Birth Weight, Alberta, 1994 to 1998 Combined

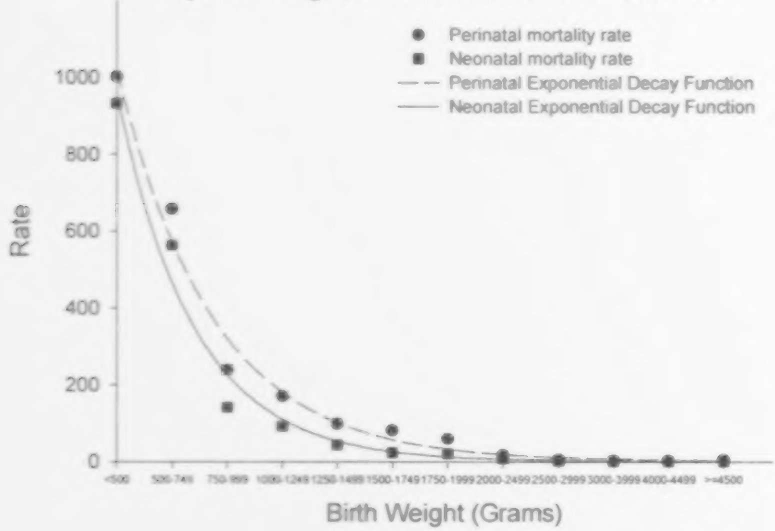
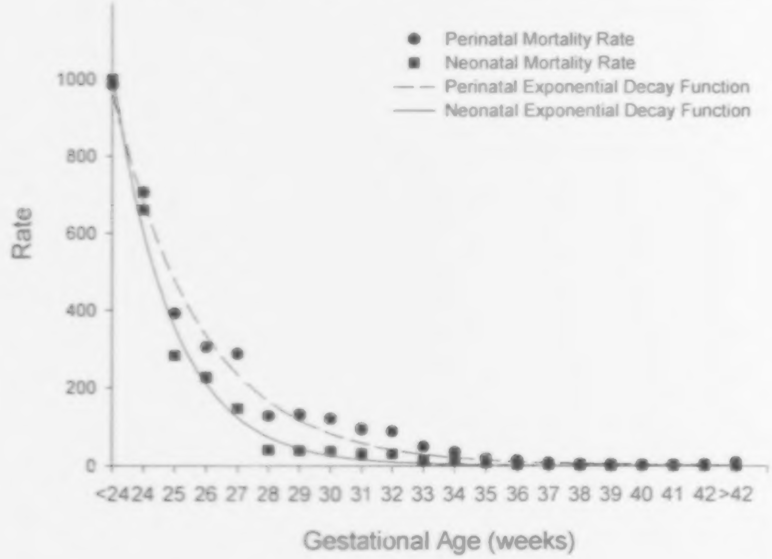


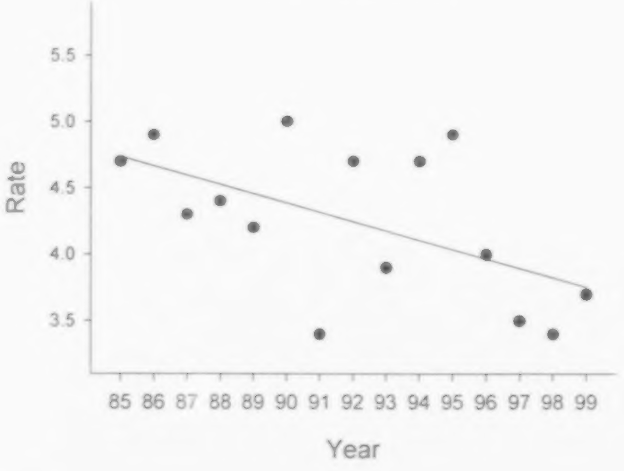
Figure 27
Perinatal Mortality Rate (per 1,000 Total Births), and
Neonatal Mortality Rate (per 1,000 Live Births)
by Gestational Age, Alberta, 1994 to 1998 Combined



Neonatal mortality

- A neonatal death occurs when an infant is born alive but dies before 28 days of age.
- The **neonatal mortality rate** (per 1,000 live births) has shown a significant linear decrease over the last 14 years (see Tables A1 and A67, and Figure 28). The fifteen-year high was 5.0 in 1990; the fifteen-year low was 3.4, reached in 1991 and 1998. The 1999 rate was 3.7.
- 1997 neonatal mortality rates were 3.9 in **Canada** and 3.5 in Alberta (Statistics Canada, 1999).
- Neonatal mortality rates by **birth weight** are provided for 1998 (Table A59) and for 1994 to 1998 combined (Table A60 and Figure 26). Rates decline with increasing birth weight.
- Neonatal mortality rates by **gestational age** are provided for 1998 (Table A61) and for 1994 to 1998 combined (Table A62 and Figure 27). Neonatal mortality declines with increasing gestational age.
- Table A63 provides neonatal mortality rates by **maternal age** for 1998. Uncorrected neonatal mortality rates were lowest for mothers aged 18 to 29, but *these rates must be interpreted with caution* due to the low number of cases involved.
- Neonatal mortality rates by **facility RHA** for 1998 for infants with birth weights 500 grams and over are provided in Table A64.
- Neonatal mortality rates by **level of hospital** for 1998 for infants with birth 500 grams and over are provided in Table A65.
- Table A68 provides **detailed information on neonatal deaths** for facility RHAs for 1998.
    - The neonatal mortality rate for birth weights 500 grams and over was 2.7; the rate for birth weights 1,000 grams and over was 1.7. These rates were 1.4 and 0.7, respectively, when corrected for congenital anomalies.
- The **early neonatal mortality rate** for 1998 was 2.8; the rate excluding those born weighing less than 500 grams was 2.0. When corrected for congenital anomalies, the early neonatal mortality rate for babies weighing 500 grams or greater was 1.1.
- The **late neonatal mortality rate** in Alberta remains fairly stable. The rate for 1998 was 0.7 (per 1,000 live births). All babies in the late neonatal mortality category weighed 500 grams or greater. When corrected for congenital anomalies the late neonatal mortality rate was 0.3
- Neonatal mortality rates for 1997 to 1999 combined are in Table A69.

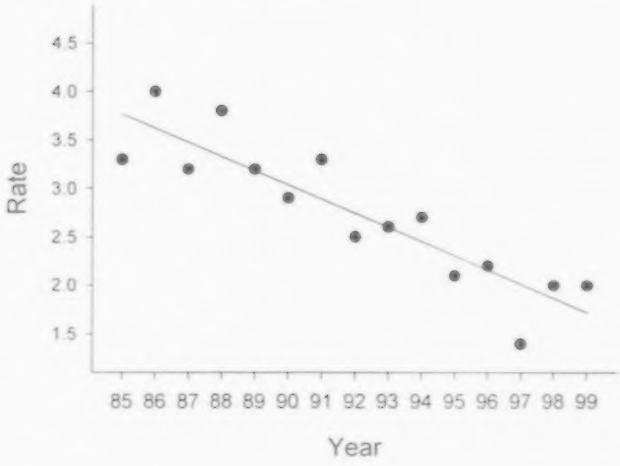
Figure 28.
Neonatal Mortality Rate (per 1,000 Live Births),
Alberta, 1985 to 1999



Post-neonatal mortality

- A post-neonatal death occurs when an infant is born alive but dies between 28 days and one year of age.
- The **post-neonatal mortality rate** (per 1,000 live births) has shown a significant decreasing linear trend over the last 14 years (see Tables A1 and A67 and Figure 29).
    - The rate was 2.0 in 1999. The fifteen-year high was 4.0, occurring in 1986; the low was 1.4, occurring in 1997.
- For 1997, the post-neonatal mortality rate was 1.6 in **Canada** (Statistics Canada, 1999) and 1.4 in Alberta.
- Post-neonatal mortality rates by residence and facility **RHA** for 1997 to 1999 combined are in Table A69.

Figure 29.
Post-neonatal Mortality Rate (per 1,000 Live Births),
Alberta, 1985 to 1999



Causes of perinatal, neonatal, and post-neonatal Deaths

- In 1998, there were 122 stillbirths, 76 early neonatal deaths and 26 late neonatal deaths weighing 500 grams or more. The causes of death are listed in Table A70.
  - Low birth weight, prematurity and congenital anomalies continue to be major factors in perinatal mortality, as shown in tables A59, A60, A61, A62 and A66.
- Most **stillbirths** are **low birth weight**. In 1998, 38.7% of the stillbirths weighed less than 500 grams; 76.6% weighed less than 2500 grams.
- The leading causes of death in 1998 in stillbirths weighing 500 grams or more were: **unexplained** (21.3%), and **congenital anomalies** (20.5%).
  - For cause of **antepartum** deaths of babies weighing 2500 grams or more refer to Table A71. 34.9% had **intrauterine asphyxia**, unknown cause, followed by 27.9% **for nuchal cord/true knot or cord occlusion**.
- **Intrapartum and neonatal deaths** of babies who weighed 2500 grams or greater, excluding those with major congenital anomalies, accounted for 4.8% of deaths. A summary of the causes of death for these babies is found in Table A72.
  - In each of these cases the fetus was considered to be alive at the start of labour, prior to and during induction of labour and/or cesarean section.
  - Upon review of cases by the Reproductive Care Committee, the office consultant corresponds with the primary care provider involved, drawing attention to preventable features or aspects where the care could have been improved, or where the care was appropriate although the outcome not positive.
- Of the neonatal deaths in 1998, 76% were **low birth weight**.
- **Congenital malformation** accounted for 48.0% of neonatal deaths and 20.6% were a result of **prematurity**
- In 1998, the most common causes of congenital malformation in babies weighing 500 grams or more were chromosomal anomalies (29.7%), followed by cardiovascular anomalies (16.2%). For a specific breakdown of the major anomalies as causes of death in 1998, see Table A73. A summary of congenital anomalies as causes of death from 1994 to 1998 is in Table A74.
  - The most common lethal cardiac lesion was hypoplastic left heart, accounting for 50% of the cardiac anomalies.
- The **autopsy rate** in Alberta in 1998 for the stillbirth and neonatal deaths was 49%. Autopsies were done on 53% of the stillbirths and 42% of the neonatal deaths. No autopsies were performed on 30% of the unexplained stillbirths. The placenta pathology was not available in 16% of the stillbirths.
  - The AMA Committee on Reproductive Care has produced a protocol for the investigation of stillbirths and it recommends maternal investigations, stillborn physical examinations, autopsies and placental pathology to assist with better understanding the cause of death. Although autopsy requires parental consent, placenta pathology and examination of the stillborn do not.
- The leading cause of **post-neonatal death** is **Sudden Infant Death Syndrome** (SIDS). In 1999, SIDS accounted for 47% of post-neonatal deaths and the mortality rate for SIDS was 1.0 per 1,000 live births.
  - Over time, the proportion of post-neonatal deaths due to SIDS and the SIDS mortality rate have both shown decreasing trends (see Figures 30 and 31).

Figure 30.
Percent of Post-Neonatal Deaths due to
Sudden Infant Death Syndrome, Alberta, 1985 to 1999

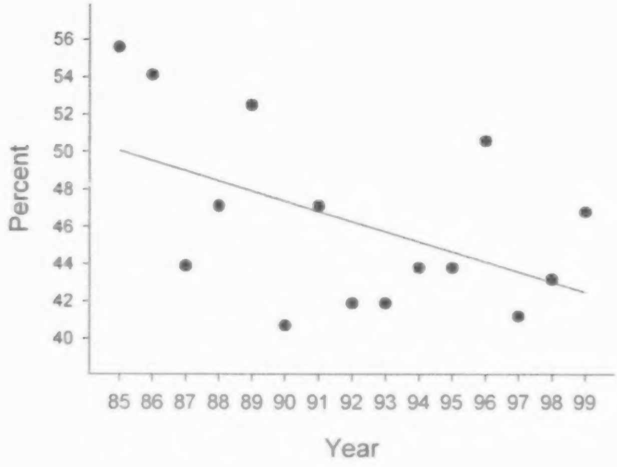
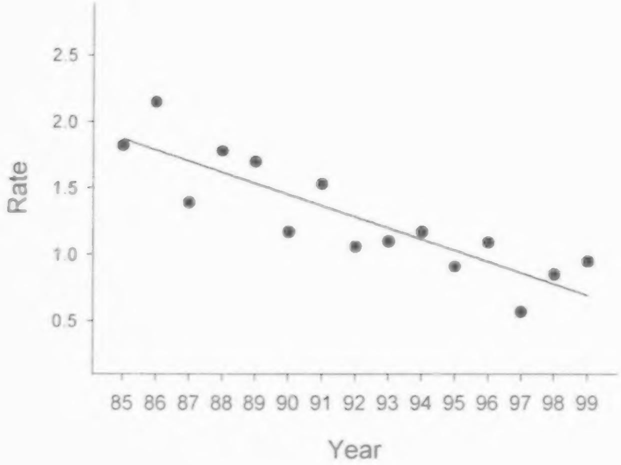


Figure 31.
Sudden Infant Death Syndrome Rate
(per 1,000 Live Births), Alberta, 1985 to 1999



Risk factors associated with perinatal and neonatal mortality

- "There is substantial literature that addresses the impact of maternal behaviors on infant health. Potential risk factors for sub-optimal prenatal and newborn outcome include smoking, alcohol consumption and the use of illicit drugs. Research literature also indicates an increased risk for both low birth weight and pre-term delivery among younger and older mothers." (Tough, Svenson, and Schopflocher, 1999, Executive Summary).
- Statistics reported to the AMA Reproductive Care Committee by Medical Records Departments of hospitals indicate that in Alberta in 1998, 26% of women delivering **smoked** during the pregnancy. Thirty-five percent of women who had a stillbirth or neonatal loss smoked throughout pregnancy.
- Of the stillbirth and neonatal deaths that occurred in Alberta in 1998, 6% had **substance abuse** scored under risk factors. This figure is likely an underestimate, as it is dependent upon the client revealing that she did drink alcohol or take illicit drugs during pregnancy, and also upon health care personnel having completed the risk score.
- Table A63 shows the stillbirth and neonatal mortality rates by **maternal age**.
  - The perinatal mortality rate for mothers under 18 years was 10.1 (per 1,000 total births) in 1998, while the neonatal mortality rate (per 1,000 live births) was 4.5. For women 35 and over in 1998, the perinatal mortality rate was 11.7 (per 1,000 total births) and the neonatal mortality rate was 6.2 (per 1000 live births). These rates are higher than those for 18 to 39 year olds, but *they must be interpreted with caution* due to the low number of cases involved.

Wiggelsworth classification of perinatal and neonatal deaths

- A summary of perinatal and neonatal deaths classified according to Wiggelsworth for 1998 is in Table A75. Table A76 shows the Wiggelsworth Classification from 1994 to 1998.
- **Group 1 – Deaths before the start of labour**: 29% of deaths were assigned to this category in 1998. Abruptio was a factor in 22% of these deaths, and 72% occurred before 37 weeks gestation.
- **Group 2 – Lethal or potentially lethal malformations**: Lethal or potentially lethal malformations accounted for 32% of deaths in 1998.
- **Group 3 – Deaths associated with prematurity:** Prematurity was a factor in 22% of deaths in 1998; 36% of these deaths were intrapartum deaths. Ninety–five percent of the deaths in this group had birth weights less than 1000 grams. Of those weighing less than 1000 grams, 39% were intrapartum deaths and 61% were neonatal deaths.
- **Group 4 – Intrapartum Deaths, Neonatal deaths <4 hours old, Neonatal deaths >1000 grams and >4 hours old with evidence of cerebral birth trauma/asphyxia:** Four percent of the deaths were in this group in 1998. Massive hemorrhage/abruptio placenta was a factor in 25% of these cases.
- **Group 5 – Defined specific condition**: A specific condition was defined in 14% of the deaths in 1998. Table A77 lists these defined specific conditions for 1994 to 1998. Stillbirths accounted for 58% of this group, and neonatal deaths accounted for 42%. Of the babies in this group, 49% weighed 2500 grams or greater. Cord anomalies/accidents are consistently the most common finding in this category, followed by deaths at term that could not be explained.

Infant Mortality

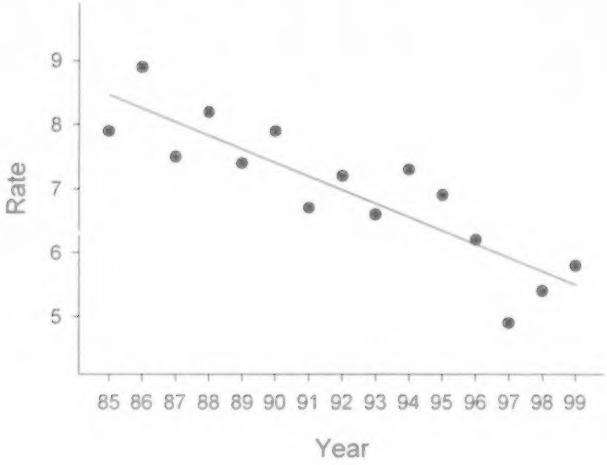
- An infant mortality occurs when an infant dies before reaching 12 months of age. This includes neonatal and post-neonatal deaths.
- Infant mortalities are more likely to occur with low maternal education, low or high maternal age, low birth weight, and pre-term birth; infant mortality is also more common in males (Chen et al., 1998; Nault, 1997).
- Maternal smoking in singleton births has been associated with an infant mortality rate nearly double that of nonsmokers (Pollack, Lantz, and Frohna, 2000).
- From 1985 to 1996, the **infant mortality rate** (per 1,000 live births) fluctuated, but there was an overall decrease (see Tables A1 and A67 and Figure 32). The infant mortality rate has decreased more dramatically since 1996. The 1999 rate was 5.8.
- Alberta's infant mortality rate was 4.9 in 1997, compared to a **Canadian** rate of 5.5 (Statistics Canada, 1999).
- Numbers of infant mortalities for the RHAs appear in Table A78; rates are not provided due to the low numbers.
  - Combined data for 1997 to 1999 show that infant mortality rates vary across the **RHAs** (see Table A69).
    - Map 12 shows the rates for **residence RHAs**. The infant mortality rate was significantly lower than the provincial average in RHA 4.
    - The infant mortality rate also varies by **facility RHA.** The rate was higher than the provincial average in RHA 10, and lower than the provincial average in RHAs 1, 2, 6, 7, 11, 13, 14, and 16.
- Infant mortality rates for **males and females** from 1985 to 1999 are shown in Table A79. The female rate is consistently lower than the rate for males.
  - The table below shows male and female infant mortality rates for Canada and Alberta in 1997. The Alberta rate is lower than the Canadian rate for both genders.

Infant Mortality Rate (per 1,000 live births) by Gender, Alberta and Canada, 1997

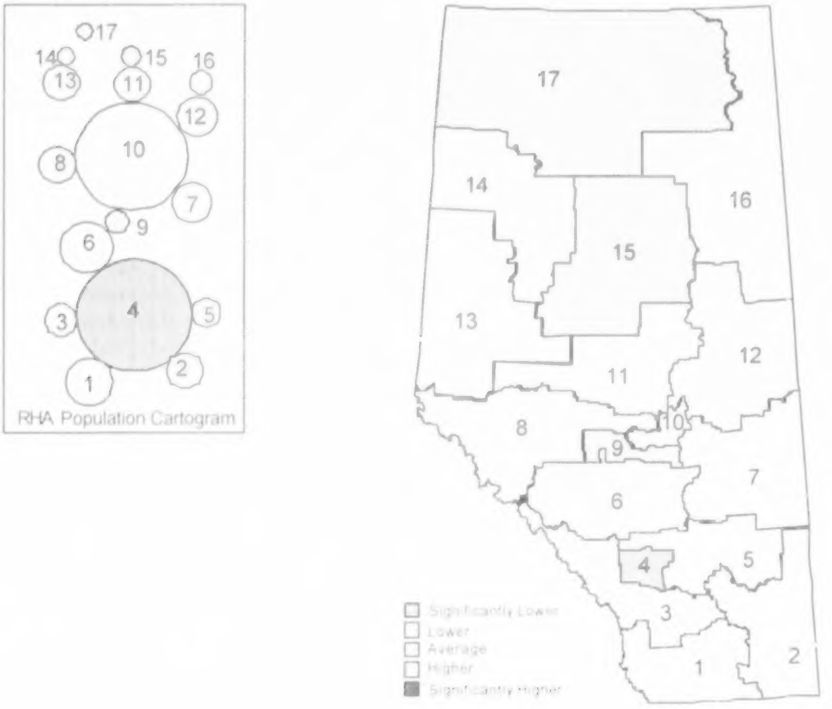
Gender	Alberta	Canada
Female	4.3	5.0
Male	5.5	6.0

Sources:
Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.
Births and Deaths, 1997, Statistics Canada (shelf tables).

Figure 32.
Infant Mortality Rate (per 1,000 Live Births),
Alberta, 1985 to 1999



Map 12. Infant Mortality Rate (per 1,000 Live Births) by Residence RHA, Alberta, 1997 – 1999 Combined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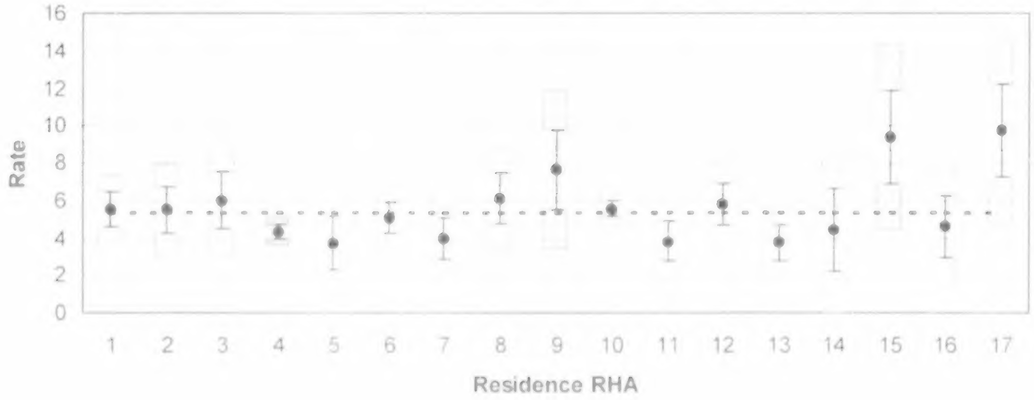
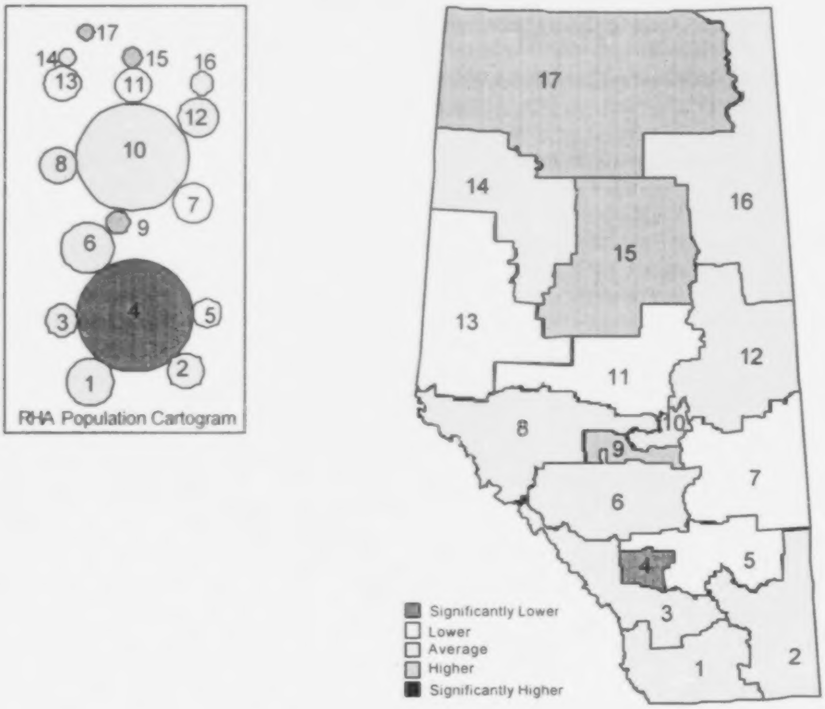


Map 12. Infant Mortality Rate (per 1,000 Live Births) by Residence RHA, Alberta, 1997 – 1999 Combined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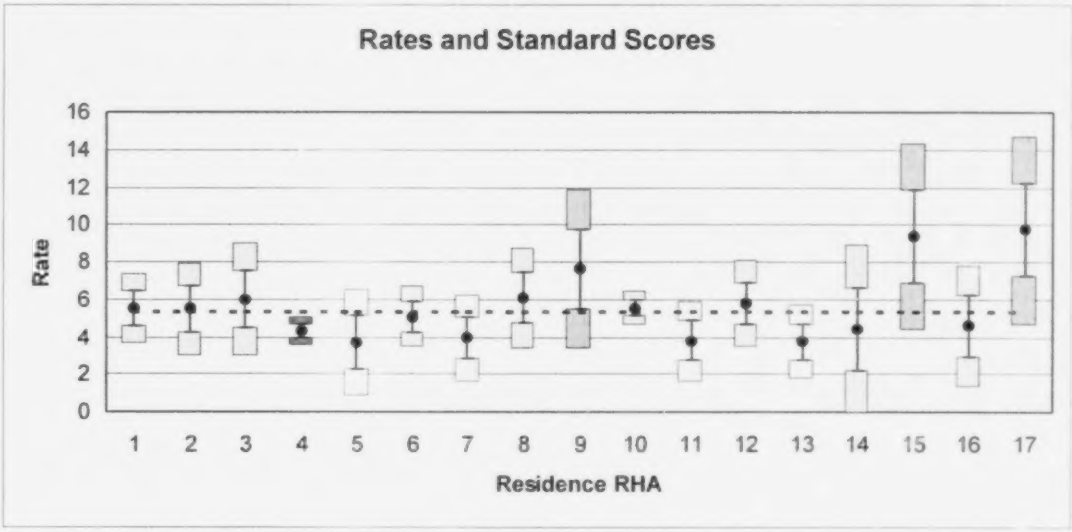
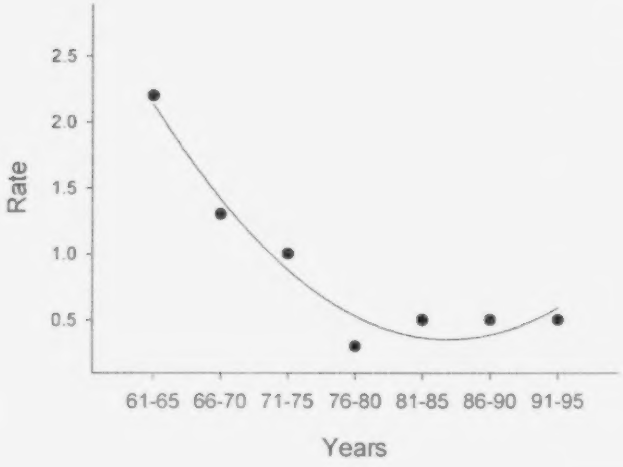
Rates and Standard Scores



Maternal Mortality

- The AMA Committee on Reproductive Care reviews reported maternal deaths that occur during pregnancy and up to 90 days post-delivery. These deaths are classified according to the Council on Medical Service, American Medical Association, Committee on Maternal And Child Care, A Guide for Maternal Death Studies (1964). This classification includes three categories:
  - Direct obstetric deaths: Maternal deaths resulting from complications of pregnancy, childbirth or puerperium including intervention, omission, incorrect treatment, or from chain of events resulting from above.
  - Indirect obstetric deaths: Maternal deaths resulting from previous existing diseases or diseases that developed during pregnancy, childbirth or the puerperium which are not due to a direct obstetric cause.
  - Unrelated deaths: Maternal deaths not related to pregnancy, childbirth or puerperium, but occurring within the defined time frame.
- Both **direct and indirect maternal mortality rates** have significantly declined over time (see Table A80 and Figure 33).
- In 1998, the direct maternal death rate was 0.3 (per 10,000 live births; this represents 1 direct maternal death), and the overall rate was 0.8 (there were 2 indirect maternal deaths).

Figure 33.
Direct Maternal Mortality (per 10,000 Live Births),
Alberta, 1961 to 1995



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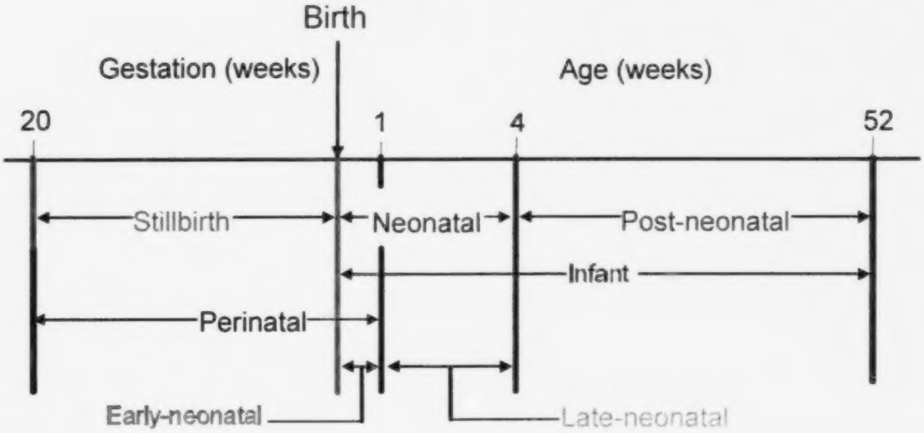
Appendix 1: Definition of stillbirth and infant death


Birth
Gestation (weeks)
Age (weeks)
20
1
4
52
Stillbirth
Neonatal
Post-neonatal
Infant
Perinatal
Early-neonatal
Late-neonatal

Stillbirth : at least 20 weeks of gestation or after attaining a weight of 500 g.
Early-neonatal mortality : deaths occuring before 7th full day after birth.
Perinatal mortality : stillbirths of at least 20 weeks of gestation and early-neonatal deaths.
Late-neonatal mortality: deaths between 7th full day and 28th full day of life.
Neonatal mortality : deaths occuring within 28 days after birth.
Post-neonatal mortality deaths between the 4th full week and the 52nd full week.
Infant mortality : deaths occuring within the first year of life.

Appendix 2: Glossary

age: age at the last birth date preceding the event.(Statistics Canada, Births and Deaths, 1995)

age-specific fertility rate: number of live births per 1,000 women in a specific age group. (Statistics Canada, Births and Deaths, 1995)

abortion: termination of pregnancy before the fetus is viable.
spontaneous: abortion occurring naturally.
induced: abortion brought on intentionally by medication and instrumentation.
(Encyclopedia and Dictionary of Medicine, Nursing, and Allied Health)

antepartum (AP): before the onset of labour.

birth or live birth: the complete expulsion or extraction from the mother, irrespective of the duration of the pregnancy, of a fetus in which, after expulsion or extraction, there is breathing, beating of the heart, pulsation of the umbilical cord or unmistakable movement of voluntary muscle, whether or not the umbilical cord has been cut or the placenta is attached. (Alberta Vital Statistics Act, RSA 1980 cV-4 s1)

birth weight: first weight of the fetus or newborn obtained after birth, expressed in grams. (Statistics Canada, Births and Deaths, 1995). **low birth weight (LBW)**: birth weight is less than 2,500 grams. (Statistics Canada, Births and Deaths, 1995). **very low birth weight (VLBW):** birth weight is less than 1,500 grams. (Statistics Canada, Births and Deaths, 1995). **extreme low birth weight (ELBW)**: birth weight is less than 1,000 grams. (Statistics Canada, Births and Deaths, 1995) **small for gestational age (SGA):** birth weight falls below the tenth percentile of that is appropriate for gestational age. **large for gestational age (LGA):** birth weight falls above the ninetieth percentile of that is appropriate for gestational age.

crude birth rate (CBR): number of live births per 1,000 population. (Statistics Canada, Births and Deaths, 1995)

direct obstetric death: maternal death resulting from complications of pregnancy, childbirth or puerperium including intervention, omission, incorrect treatment or from a chain of events resulting from any of the above.

frequency: number of events or cases in a category.

general fertility rate (GFR): total number of live births per 1,000 women aged 15 to 49. (Statistics Canada, Births and Deaths, 1995)

gestation period: interval, in complete weeks, between the first day of the last menstrual period of the mother to the date of removal of fetus from the mother. For cases with unknown date of last normal menses, gestation period is based on clinical estimation. **Pre-term** refers to a period of gestation less than 37 full weeks; **term**, 37 to 42 complete weeks; and **post-term**, more than 42 weeks. (Statistics Canada: Therapeutic Abortions, 1994; Births and Deaths, 1995)

indirect obstetric deaths: maternal death resulting from previous existing disease or diseases that developed during pregnancy, childbirth or the puerperium which was not due to direct obstetric cause.

infant mortality: deaths to children under one year of age. (Statistics Canada: Births and Deaths, 1995)

Intrapartum (IP): during labour.

maternal death: the death of a woman known to be pregnant or within 90 days of delivery or termination of the pregnancy, irrespective of the duration of or site of the pregnancy.

mean: the arithmetic average of a set of observations, the sum of scores divided by the number of scores.

median: the middle value in a set of values that have been arranged in order from highest to lowest.

multiple birth: birth in which more than one infant is born, including live births and stillbirths. (Statistics Canada, Births and Deaths, 1995)

multiple pregnancy: a pregnancy with more than one fetus.

neonatal deaths (NND): death of a live born infant occurring less than 28 full days after birth, including **early neonatal deaths**: before seventh full day or less than 168 hours; and **late neonatal deaths**: between the seventh and 28th full day of life.

perinatal death (PND): includes stillbirths and early neonatal deaths.

rate: the number of events occurring in a population divided by the size of the population.

stillbirth: the complete expulsion or the extraction from the mother after at least 20 weeks pregnancy, or after attaining a weight of 500 grams or more, of a fetus in which, after the expulsion or extraction, there is no breathing, beating of the heart, pulsation of the umbilical cord or unmistakable movement of voluntary muscle. (Alberta Vital Statistics Act, RSA 1980 cV-4 s1)

total births: all live births and stillbirths.

total fertility rate (TFR): average number of children a woman can expect to have in her lifetime, based on the fertility rates of a given year. It is equal to the sum of the age-specific fertility rates (age 15 to 49). (Statistics Canada, Births and Deaths, 1995)

Appendix 3: Codes used for data extraction

Induced Abortion

Physician claims induced abortion procedure records were identified by the following health service codes: 86.41, 87.0, 87.0A, 87.1, 87.21.

International Classification of Disease – 9th Revision – Clinical Modification (ICD-9-CM) Codes

Spontaneous abortion

Diagnostic code 634

Congenital Anomalies

Diagnostic Codes

740.0-742.0	Neural Tube Defects
745.0-745.9	Heart Septal Defect
758.0	Down Syndrome

For "All congenital anomalies combined" analyses, the following diagnostic codes were included:

Congenital Anomalies within ICD-9 740.0-759.9:

740.0-742.9	Nervous System Anomalies
743.0-743.9	Eye Anomalies
744.0-744.9	Ear, Face and Neck
745.0-747.9	Cardiovascular System Defect
748.0-748.9	Respiratory System Anomalies
749.0-751.9	Digestive System Anomalies
752.0-752.9	Genital Organ Anomalies
753.0-753.9	Urinary System Anomalies
754.0-756.9	Musculoskeletal Anomalies
757.0-757.9	Integument Anomalies
758.0-758.9	Chromosomal Anomalies
759.0-759.9	Other and Unspecified Anomalies

Congenital Anomalies/Disorders Outside ICD-9 740.0-759.9:

140-239	Neoplasm
243.9	Congenital Hypothyroidism
255.2	Adrenogenital Disorders
270	Amino Acid and Organic Acid Disorders
271	Disorders of CHO Transport and Metabolism
275	Disorders of Mineral Metabolism
277.00	Cystic Fibrosis
282	Hereditary Hemolytic Anemias
343 (incl 342, 344)	Cerebral Palsy
348.0	Cerebral Cysts
760.76	Fetal Alcohol Syndrome

Hospital Delivery

Diagnostic Codes

640-648:		Complications mainly related to pregnancy
Fifth digit:	1	Delivered, with or without mention of antepartum condition
	2	Delivered, with mention of postpartum complication
650:		Delivery in a completely normal case
651-659:		Other indications for care in pregnancy, labour and delivery
Fifth digit:	1	Delivered, with or without mention of antepartum condition
	2	Delivered, with mention of postpartum complication

V Code

V27:	Outcome of delivery

Induction

Procedure Codes

73.4:	Medical induction of labour
73.01:	Induction of labour by artificial rupture of membranes
73.1:	Other surgical induction of labour

Operative Delivery

Procedure Codes

74:	Cesarean section and removal of fetus (7491(hysterotomy to terminate pregnancy) was excluded).
72.0:	Low forceps operation
72.1:	Low forceps operation with episiotomy
72.2:	Mid forceps operation
72.21:	Mid forceps with episiotomy
72.29:	Other mid forceps operation
72.3:	High forceps operation
72.31:	High forceps operation with episiotomy
72.39:	Other high forceps operation
72.7:	Vacuum extraction
72.71:	Vacuum extraction with episiotomy

Appendix 4: Epidemiologic measures for maps

All health events reported in this document are mapped according to the method described below. It was developed to address the issue of how population sizes of health regions can affect rate stability -- specifically, rates will be less stable for RHAs with small populations than those for RHAs with larger populations. The mapping method used in this report is designed to address this issue and allow statistically consistent interpretations. (As an example the numbers shown in the calculations in Steps 1, 2 and 3 below are for low birth weight babies born in the Chinook, Palliser and Northwestern health regions and compared against provincial rates from 1994 to 1996.)

The mapping method consists of the following seven steps:

1. Calculate the rates for each region. For crude rates, an example of this calculation is shown below. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

Health Region #	Low Birth Weight (LBW)	Total Births	Proportion LBW
1	189	3,453	0.05
2	183	3,069	0.06
.	.	.	.
.	.	.	.
.	.	.	.
17	65	1,557	0.04

2. Calculate the rate for the province. For crude rates, an example of this calculation is shown below. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

- Number of low birth weight newborns: 6,726
- Total number of live births: 113,252
- Proportion low birth weight: 6,726 / 113,252 = 0.059

3. Calculate standard error of a probability of a health event for each regional rate. For crude rates the formula which follows can be used. *Note: where sex- age standardized rates are used a more detailed calculation would be required.*

$$\sqrt{\frac{p(1-p)}{n}}$$

Where: p is the proportion (estimate of probability) for the region
n is the number of births.

Health Region #	Low Birth Weight	Total Births	Proportion LBW	Calculation	Standard Error
1	189	3,453	0.05	$\sqrt{\frac{0.05(1-0.05)}{3{,}453}}$	0.0038

2	183	3,069	0.06	$\sqrt{\frac{0.06(1-0.06)}{3,069}}$	0.0037
⋮	⋮	⋮	⋮	⋮	⋮
17	65	1,557	0.04	$\sqrt{\frac{0.04(1-0.04)}{1,557}}$	0.0051

4. Calculate the regional-specific standard scores.

   Subtract the regional proportion from the provincial proportion and divide these by the standard score derived for each region in step 3. Repeat for each region.

$$\frac{\text{regional proportion} - \text{provincial proportion}}{\text{regional standard error}}$$

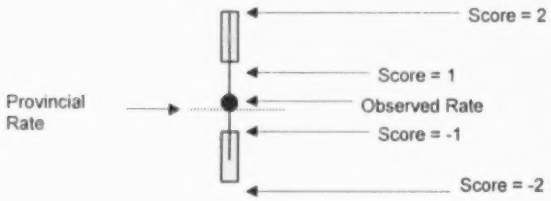
5. Graph the regional-specific standard scores calculated in Step 4.

   The following colour scheme is used to differentiate the rates that may differ from the provincial average.

Score	Interpretation	Colour
≥ 2	Higher than provincial average (significant difference in a conventional statistical test (p<0.05)	Red
≥ 1 and < 2	probably higher than provincial average (p > 0.5 but < 0.95 that difference is not due to random variation)	Orange
< 1 and > -1	Not likely to differ from provincial average (p< 0.5 that difference is not due to random variation)	Yellow
≤ -1 and > -2	Probably lower than provincial average (p > 0.5 but < 0.95 that difference is not due to random variation)	Light green
≤ -2	Lower than provincial average (significant difference in a conventional statistical test (p<0.05)	Dark green

The figure below illustrates how to interpret the graphic for an individual region. The yellow bars are used to show that the provincial rate crosses between the 1 and –1 score range. The table above lists other colour possibilities by score category.

The black dot represents the value of the rate for each region. The colour of the bars above and below the dot represents the score of the region. The portion of the bar closest to the black dot represents the value for a standard score of 1 or –1, while the part of the bars farthest from the dot represent the value for a score of 2 or –2.



6. Generate maps using the same categories for each region as listed in Step 5.

The graph and map are placed in the same page. The map allows the reader to obtain a quick overview while more detailed information is presented on the graph . The colour assigned to each region is based on the colour of the bars in the graph for the same region. This provides a spatial context to the distribution patterns and consistency among the two graphic elements.

7. Generate a cartogram.

A cartogram is similar to a map. However, each region is represented by a circle that is sized proportionately to the regional population. This graphic is useful for interpreting reported rates by providing an indication of the population size of each region. Each RHA in the cartogram is coloured the same as it is on the provincial map.

Appendix 5: Perinatal morbidity report by Dr. Charlene Robertson

Morbidity Report from the Northern Alberta
Neonatal and Infant Follow-up Clinic.
The 1999 Consensus Statement on Intrapartum Asphyxia
in Relation to Perinatal Asphyxia at Term
Local data – births 1997 to 1999

The literature states that perinatal asphyxia does not result in adverse outcome beyond what would be expected in a population unless moderate or severe neonatal encephalopathy occurs. As stated by Volpe[1] outcome studies of perinatal asphyxia have relied upon the clinical triad of fetal distress (using a variety of measures), depression at birth (the Apgar score) and the need for resuscitation, and abnormal newborn neurological examination often termed neonatal encephalopathy, to diagnose asphyxia. For previous outcome studies from Northern Alberta, we have used the presence of moderate (hypotonia and suppressed primitive reflexes), or severe (flaccidity and absent primitive reflexes) neonatal encephalopathy occurring after one hour of life and before 7 days of life and thought to be due to a hypoxic-ischemic event together with abnormal fetal heart rate patterns, a one or five minute Apgar score of less than 5, and resuscitation at birth or following the neonatal event, to diagnose hypoxic-ischemic encephalopathy. The hypoxic-ischemic event could occur before labour, during labour, at birth or in the very early neonatal period. We have excluded from any reports, children with mild hypoxic-ischemic encephalopathy as their results are similar to corresponding peer groups, children with syndromes or congenital malformations associated with developmental delay, neonatal absence syndrome, intracranial bleed as the primary insult, and all other causes of encephalopathy. The following statements have no relation to prenatal hypoxic-ischemic events where the term newborn does not present with an encephalopathy typical of hypoxic-ischemic encephalopathy.

Our data has repeatedly shown adverse outcome for neonates with moderate or severe neonatal encephalopathy: death or disability, cerebral palsy, cognitive delay, visual loss, epilepsy, and/or a hearing loss in 20% of those with moderate and 100% of those with severe.[2] During the 3 years from 1997 to 1999, 107 children were cared for in the neonatal intensive care units with hypoxic-ischemic encephalopathy. Of these, 11 had severe and 96 moderate hypoxic-ischemic encephalopathy. Of those with severe, 8 died and 3 remained disabled with spastic quadriplegia, mental retardation, and epilepsy. Of the 96 children with moderate hypoxic-ischemic encephalopathy 22 (23%) are disabled at 18 to 24 months of age. Of these 22 disabled children, 10 have cerebral palsy with or without cognitive delay, vision loss or epilepsy, another 10 have cognitive delay, and 2 have high frequency sensorineural hearing loss.

In order to further advance the understanding of perinatal asphyxia we need information on its time of onset. The present operational definition of intrapartum asphyxia gives an opportunity to determine not only the outcome but also learn more about the causation of this type of perinatal asphyxia. The definition of the 1999 International Consensus Statement[3] is as follows.

Intrapartum asphyxia as an acute intrapartum event sufficient to play a causation role in cerebral palsy has:

- metabolic acidosis (pH less than 7.00 and base deficit $\geq$ 12 mmol/L),
- early onset moderate or severe hypoxic-ischemic encephalopathy, and
- spastic quadriplegic or dyskinetic cerebral palsy.

In addition, information of nonspecific evidence to support this diagnosis includes:

- sentinel (single) hypoxic event occurring immediately before or during labour, for example prolapsed cord or ruptured uterus,

- a sudden, rapid, and sustained deterioration of fetal heart rate pattern usually after a sentinel event where the pattern was previously normal,
- Apgar score of 0 to 6 for longer than five minutes,
- early evidence of multisystem involvement,
- early imaging events of acute cerebral abnormality.

The strength of this consensus is that it gives a widely accepted working definition of at least part of perinatal asphyxia. It gives us an opportunity to review our outcome of neonates so defined.

During the years 1997 through 1999, 41 children were cared for in our tertiary-level NICUs with histories consistent with intrapartum asphyxia. All children had a pH of less than 7 however, base deficit information was missing on many children. Of these 41 children 24% died (4 in hospital and 6 following discharge). Of the remaining 31 children eight had spastic quadriplegia or spastic athetoid quadriplegia with mental retardation; one had spastic athetoid cerebral palsy without mental retardation to date, five had mental retardation without cerebral palsy, 14 had borderline mental development without cerebral palsy, three had normal mental developmental indexes of ≥85 however two of these had severe expressive language delay and one had severe attentional deficit.

This definition does not take into consideration many new areas of study such as the maturity of certain brain cells at the time of hypoxic-ischemic insult hence the susceptibility to insult of specific brain cells related to metabolic function; autoregulation; blood shift protective mechanisms; and the time, degree, and duration of insult as well as re-oxygenation injury.[4,5] Various patterns of hypoxic-ischemic insult within the area of intrapartum asphyxia are being recognized.

A. A clinical situation of a sudden acute asphyxia such as prolapsed cord may be followed by imaging at 3 days of bilateral basal ganglia and thalamus abnormalities indicating an acute, near total asphyxia. Because of the rapidity of insult there may or may not be metabolic acidosis and nonbrain organs may be spared.[6] The outcome of the child may be normal but the most likely outcome is a moderate neonatal encephalopathy and later a dyskinetic cerebral palsy usually with some spasticity with normal intellect and normal head growth.

There is a general feeling that the best imaging to document this insult is MRI at 72 hours.

B. If such an acute total asphyxia occurs for a longer period of time, perhaps greater than 20 minutes, then the full picture of severe metabolic acidosis and multiorgan failure is seen. Such children may show bilateral basal ganglia and/or thalamus abnormalities but tend to show severe generalized cerebral edema with generalized necrosis and involvement of the cortical spinal tract, visual cortex, and as well the subcortical nuclei. After a period of time of 10 to 21 days, CT Scan show an encephalomalacia. The outcome of such children is usually a severe hypoxic-ischemic encephalopathy and the long term outcome a spastic quadriplegia or spastic athetoid quadriplegia with mental retardation, microcephaly, and possibly epilepsy. Death is a frequent outcome. A good description of this syndrome of acute near-total intrauterine asphyxia is available.[7]

The more common type of perinatal asphyxia, that of partial, prolonged asphyxia currently has no operational definition. The early imaging, usually a CT Scan at 3 to 5 days, shows edema and subsequent parasagittal (watershed) damage is visible. The basal ganglia are usually not affected. Similarly the cortical spinal tract and visual cortex may also not be affected. The clinical pattern of the encephalopathy is somewhat different than those with intrapartum asphyxia in that there is a more obvious pattern of hypotonia of the upper body compared to the lower body and in particular a greater hypotonia of the shoulder girdles. This is due to the white matter damage in the watershed region. The controversy for these children is the possible absence of metabolic acidosis at birth. The pH may be normal suggesting that the child has recovered in utero and that the encephalopathy has persisted, in much the same fashion as after birth. History suggests that the fetal heart rate tracing when recorded may be reassuring but we also have a number of cases of no variability of the fetal heart rate lasting for a prolonged period of time before intervention, or variable or late decelerations. Sometimes there is late bradycardia. Such children usually have a moderate, not severe encephalopathy, have early onset of a delayed head growth velocity, and may show an outcome of spastic quadriplegia with mental retardation, epilepsy or visual impairment or mental retardation without cerebral palsy. A variety of learning difficulties have been noted for survivors without cerebral palsy, mental retardation, cortical visual impairment, or epilepsy and the most prevalent in our follow-up is that of a delay in language development and subsequent central auditory processing difficulties. The outcome in about ½ of the children appears to be normal.

It is felt that we could improve our understanding of the timing of the onset of the hypoxic-ischemic event if we consistently recorded additional information on the children cared for in the intensive care units with moderate or severe hypoxic-ischemic encephalopathy. These variables would be:

1. record changes in fetal heart patterns and sentinel events, and results of fetal scalp sampling,
2. arterial cord pH and base deficit or arterial blood gases within the first hour of life,
3. head circumference at birth or within 4 hours of birth, at 3 days, and at discharge from hospital
4. cranial imaging done at specific times. It is suggested that a CT Scan or MRI at 72 hours after birth and a CT Scan at greater than 3 weeks after birth give useful information.

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Note: The recommendations in this document are those of the author and have not been endorsed by the Alberta Medical Association or Alberta Health and Wellness.

Appendix 6: Tables

Table A1 Selected Indicators of Pregnancy Outcomes, Alberta, 1985 - 1999

Indicator	Year														
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Live Births	43,327	43,323	41,722	41,683	42,985	42,634	42,371	41,673	39,906	39,459	38,529	37,476	36,551	37,615	37,797
Crude Birth Rate (per 1,000 Population)	18.5	17.7	16.9	16.7	17.0	16.5	16.2	15.7	14.9	14.6	14.2	13.7	13.1	13.2	12.9
General Fertility Rate (per 1,000 Women Aged 15-49)	66.1	63.6	61.2	60.6	61.9	60.3	59.1	57.5	54.6	53.7	52.2	50.3	48.3	48.6	47.7
Total Fertility Rate (per 1,000 women)	1,887	1,830	1,793	1,807	1,876	1,861	1,861	1,843	1,790	1,805	1,793	1,757	1,708	1,732	1,718
Estimated Pregnancies[1]	-	54,394	51,936	53,063	54,595	54,423	54,579	55,845	54,139	53,892	52,532	51,564	51,634	52,864	52,845
Estimated Pregnancy Rate (per 1,000 Women Aged 15-49)	-	79.8	76.2	77.2	78.6	77.0	76.1	77.0	74.1	73.4	71.2	69.3	68.3	68.3	66.7
Mean Maternal Age at Delivery	26.5	26.7	26.9	27.0	27.2	27.3	27.3	27.5	27.6	27.7	27.8	28.0	28.1	28.1	28.2
Spontaneous Abortion Rate (per 1,000 Women Aged 15-49)[2]	-	6.8	6.7	7.1	7.0	7.0	7.1	7.4	7.0	7.2	6.8	6.4	6.2	6.2	6.0
Spontaneous Abortion Rate (per 100 Estimated Pregnancies)[2]	-	8.5	8.8	9.3	9.0	9.1	9.4	9.6	9.4	9.8	9.6	9.3	9.1	9.2	9.0
Stillbirths	255	267	253	297	254	296	310	279	267	266	262	236	249	191	267
Stillbirth Rate (per 1,000 Total Births)	5.9	6.1	6.0	7.1	5.9	6.9	7.3	6.7	6.6	6.7	6.8	6.3	6.8	5.1	7.0
Congenital Anomalies Rate (per 1,000 Total Births)	40.8	43.7	43.2	47.8	47.0	48.5	43.7	44.0	37.8	37.5	32.9	31.7	32.3	33.1	31.1
Low Birth Weight Rate (per 100 Live Births)	5.4	5.5	5.5	5.8	5.9	5.9	5.8	5.8	5.7	5.6	6.0	6.1	6.2	6.2	5.9
Large for Gestational Age Rate (per 100 Live Singleton Births)	11.1	10.7	10.5	10.3	10.4	10.2	10.1	9.6	9.6	9.3	9.7	9.0	9.3	8.9	8.1
Small for Gestational Age Rate (per 100 Live Singleton Births)	9.7	9.8	9.8	9.9	9.7	10.1	9.9	10.9	10.3	10.4	10.5	11.2	10.7	11.7	11.9
High Birth Weight Rate (per 100 Live Births)	10.8	11.1	10.9	10.7	10.9	11.1	11.0	11.4	11.5	11.4	11.3	11.6	11.4	12.3	12.6
Pre-Term Birth Rate (per 100 Live Births)	6.5	6.3	6.4	6.9	6.6	6.9	6.6	6.8	6.6	6.8	7.0	7.4	7.3	7.5	7.8
Multiple Birth Rate (per 100 Live Births)	2.0	1.9	2.1	2.0	2.1	2.0	2.1	2.3	2.2	2.2	2.3	2.4	2.5	2.7	2.7
Induced Abortions	6,499	6,237	5,465	6,203	6,502	6,559	6,803	8,552	8,905	8,983	8,906	9,240	10,313	10,346	10,164
Induced Abortion Rate (per 1,000 Women Aged 15-49)	9.9	9.2	8.0	9.0	9.4	9.3	9.5	11.8	12.2	12.2	12.1	12.4	13.6	13.4	12.8
Total Induction Rate (per 100 Hospital Deliveries)	12.6	14.3	12.3	12.0	16.4	17.0	17.0	16.7	21.2	21.8	21.9	22.8	23.6	24.0	25.3
Cesarean Section Rate (per 100 Hospital Deliveries)	16.7	16.3	17.0	17.1	16.3	16.1	16.0	15.9	15.8	15.7	15.8	16.3	16.5	17.3	19.1
Perinatal Mortality rate (per 1,000 Total Births)	9.7	10.0	9.5	10.7	9.2	10.8	9.9	10.5	9.9	10.3	10.8	9.6	9.8	7.8	10.1
Neonatal Mortality Rate (per 1,000 Live Births)	4.7	4.9	4.3	4.4	4.2	5.0	3.4	4.7	3.9	4.7	4.9	4.0	3.5	3.4	3.7
Post-Neonatal Mortality Rate (per 1,000 Live Births)	3.3	4.0	3.2	3.8	3.2	2.9	3.3	2.5	2.6	2.7	2.1	2.2	1.4	2.0	2.0
Infant Mortality Rate (per 1,000 Live Births)	7.9	8.9	7.5	8.2	7.4	7.9	6.7	7.2	6.6	7.3	6.9	6.2	4.9	5.4	5.8

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.
Alberta Congenital Anomalies Surveillance System, 1980-99, November 2000 release.

Notes: 1. Estimated pregnancies include livebirths, stillbirths, spontaneous abortions, and induced abortions. Estimated pregnancies are not available for 1985 because 1985 spontaneous abortion data are not available.
2. Spontaneous abortion data are not available for 1985.

Table A2 Live Births and General Fertility Rates by Residence RHA, Alberta, 1985 - 1999

Residence RHA	Year 85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Live Births															
1	2,491	2,453	2,423	2,320	2,467	2,443	2,354	2,402	2,344	2,323	2,292	2,150	2,243	2,045	2,075
2	1,292	1,320	1,185	1,227	1,270	1,274	1,199	1,202	1,146	1,133	1,269	1,161	1,183	1,242	1,228
3	835	877	835	824	876	881	872	900	857	892	834	847	910	887	863
4	12,038	12,059	11,965	11,981	12,642	12,496	12,259	12,148	11,454	11,513	11,271	11,151	11,053	11,635	11,713
5	693	718	702	681	662	689	673	675	639	637	668	650	622	625	641
6	2,824	3,065	2,839	2,758	2,854	2,811	2,875	2,828	2,833	2,620	2,611	2,586	2,499	2,555	2,639
7	1,476	1,366	1,356	1,312	1,308	1,283	1,185	1,150	1,170	1,191	1,084	1,058	1,009	1,037	999
8	1,308	1,239	1,157	1,156	1,206	1,180	1,170	1,231	1,116	1,129	1,227	1,150	1,152	1,139	1,157
9	705	700	671	666	684	653	667	702	595	605	613	567	564	565	566
10	12,530	12,787	12,097	12,391	12,427	12,543	12,626	12,005	11,588	11,139	10,559	10,162	9,547	9,965	9,999
11	1,387	1,329	1,272	1,288	1,371	1,274	1,393	1,329	1,277	1,313	1,204	1,191	1,098	1,125	1,205
12	1,935	1,817	1,803	1,698	1,782	1,706	1,701	1,724	1,680	1,630	1,565	1,503	1,496	1,524	1,475
13	1,590	1,446	1,392	1,360	1,378	1,299	1,349	1,324	1,252	1,307	1,330	1,322	1,273	1,328	1,406
14	400	394	380	354	348	352	341	331	312	329	330	331	294	320	286
15	498	518	513	481	552	511	539	550	542	592	545	529	500	521	472
16	893	773	683	744	701	764	672	670	633	577	574	599	568	590	581
17	430	460	444	442	457	475	496	502	467	529	553	518	539	509	492
Unknown	2	2	5	0	0	0	0	0	1	0	0	1	1	3	0
Alberta	**43,327**	**43,323**	**41,722**	**41,683**	**42,985**	**42,634**	**42,371**	**41,673**	**39,906**	**39,459**	**38,529**	**37,476**	**36,551**	**37,615**	**37,797**
General Fertility Rate (per 1000 Women Aged 15-49)[1]															
1	74.1	71.6	70.4	67.3	71.6	70.0	66.8	67.6	65.7	64.7	63.4	59.2	61.4	55.8	55.9
2	65.2	64.5	58.3	60.3	62.4	62.0	58.0	58.2	55.2	53.4	59.0	52.9	53.2	54.6	52.6
3	62.6	64.2	60.0	57.7	60.2	58.5	56.2	56.3	51.8	52.2	47.4	46.5	48.5	46.0	43.2
4	60.9	58.1	57.5	56.6	58.7	56.6	54.6	53.5	50.1	50.0	48.3	46.9	45.2	45.9	44.7
5	62.5	64.0	62.9	61.0	59.2	60.6	58.2	57.0	52.9	51.9	53.2	51.1	48.5	47.4	47.0
6	71.3	74.2	68.7	66.3	67.8	65.5	66.0	63.8	63.2	58.0	57.1	55.9	53.3	52.7	52.9
7	61.6	55.9	56.3	55.0	55.1	54.2	49.7	47.6	48.0	48.3	43.8	42.4	40.2	40.8	39.2
8	68.3	63.3	59.4	58.7	60.0	57.6	55.4	56.8	51.0	50.8	53.2	49.0	48.4	47.1	46.8
9	84.0	80.3	76.3	75.4	76.2	71.6	70.9	73.5	62.0	62.9	63.6	58.4	57.4	56.6	56.2
10	62.8	61.5	57.8	59.0	58.7	58.3	58.0	54.6	52.3	50.6	48.5	47.0	43.9	45.4	44.7
11	78.3	73.3	70.4	70.4	74.2	67.5	72.5	67.6	63.8	64.5	59.3	58.5	53.9	54.8	57.6
12	76.0	69.0	69.2	64.8	67.7	65.0	64.6	64.9	62.9	61.0	58.9	56.8	56.1	56.3	54.4
13[2]	-	-	-	-	63.8	60.9	62.7	61.3	58.6	60.8	59.9	57.8	54.6	55.1	56.9
14[2]	-	-	-	-	77.4	66.5	65.2	63.8	60.9	63.6	64.2	64.6	57.9	63.0	55.8
15	97.6	93.9	91.8	83.8	96.2	87.3	90.5	91.1	88.3	94.1	84.2	80.8	75.0	77.4	69.3
16	75.3	63.4	59.8	65.9	61.3	66.4	57.5	57.0	54.4	50.6	51.3	53.5	48.5	48.5	46.9
17	124.0	123.4	118.3	115.6	117.7	123.6	125.8	126.0	114.5	126.6	128.8	116.9	114.3	103.6	97.5
Alberta	**66.1**	**63.6**	**61.2**	**60.6**	**61.9**	**60.3**	**59.1**	**57.5**	**54.6**	**53.7**	**52.2**	**50.3**	**48.3**	**48.6**	**47.7**

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. General fertility rate (GFR) refers to total number of live births per 1,000 women aged 15-49.
2. Population estimations for regions 13 and 14 are not available for years 1985 through 1989.
The populations are estimated at March 31, as viewed at September 30 of each year.
RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A3 Live Births by Age Group of Mother, and Age-Specific Fertility Rates, Alberta, 1985 - 1999

Year		Age Group (Years)										
	Total	<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44	Unknown
Live Births												
85	**43,327**	36	1,021	2,064	3,085	12,128	16,932	8,778	2,108	250	10	0
86	**43,323**	26	1,065	2,068	3,133	11,417	16,777	9,483	2,267	211	9	0
87	**41,722**	34	995	2,036	3,031	10,306	16,054	9,613	2,418	258	8	0
88	**41,683**	34	957	2,045	3,002	9,733	15,973	9,973	2,621	339	8	0
89	**42,985**	34	1,017	2,112	3,129	9,661	16,063	10,845	2,926	312	15	0
90	**42,634**	36	1,052	2,206	3,258	9,351	15,524	10,875	3,228	352	10	0
91	**42,371**	47	1,141	2,242	3,383	9,283	14,793	10,990	3,468	389	18	0
92	**41,673**	52	1,150	2,082	3,232	8,952	14,090	11,373	3,548	420	5	1
93	**39,906**	36	1,087	1,893	2,980	8,639	13,239	10,952	3,615	428	17	0
94	**39,459**	38	1,021	1,976	2,997	8,205	12,916	10,996	3,814	480	13	0
95	**38,529**	28	1,002	1,985	2,987	8,070	12,221	10,826	3,916	466	15	0
96	**37,476**	31	917	1,770	2,687	7,552	11,854	10,598	4,173	565	16	0
97	**36,551**	28	833	1,705	2,538	7,361	11,690	10,034	4,227	662	11	0
98	**37,615**	25	861	1,735	2,596	7,734	11,735	10,482	4,349	644	24	26
99	**37,797**	23	842	1,737	2,579	7,861	11,671	10,281	4,608	738	34	2
Percentage of Live Births												
85	**100**	0.1	2.4	4.8	7.1	28.0	39.1	20.3	4.9	0.6	0.0	0.0
86	**100**	0.1	2.5	4.8	7.2	26.4	38.7	21.9	5.2	0.5	0.0	0.0
87	**100**	0.1	2.4	4.9	7.3	24.7	38.5	23.0	5.8	0.6	0.0	0.0
88	**100**	0.1	2.3	4.9	7.2	23.4	38.3	23.9	6.3	0.8	0.0	0.0
89	**100**	0.1	2.4	4.9	7.3	22.5	37.4	25.2	6.8	0.7	0.0	0.0
90	**100**	0.1	2.5	5.2	7.6	21.9	36.4	25.5	7.6	0.8	0.0	0.0
91	**100**	0.1	2.7	5.3	8.0	21.9	34.9	25.9	8.2	0.9	0.0	0.0
92	**100**	0.1	2.8	5.0	7.8	21.5	33.8	27.3	8.5	1.0	0.0	0.0
93	**100**	0.1	2.7	4.7	7.5	21.6	33.2	27.4	9.1	1.1	0.0	0.0
94	**100**	0.1	2.6	5.0	7.6	20.8	32.7	27.9	9.7	1.2	0.0	0.0
95	**100**	0.1	2.6	5.2	7.8	20.9	31.7	28.1	10.2	1.2	0.0	0.0
96	**100**	0.1	2.4	4.7	7.2	20.2	31.6	28.3	11.1	1.5	0.0	0.0
97	**100**	0.1	2.3	4.7	6.9	20.1	32.0	27.5	11.6	1.8	0.0	0.0
98	**100**	0.1	2.3	4.6	6.9	20.6	31.2	27.9	11.6	1.7	0.1	0.1
99	**100**	0.1	2.2	4.6	6.8	20.8	30.9	27.2	12.2	2.0	0.1	0.0
Age-Specific Fertility Rate (per 1000 Women in Each Group)[1,2]												
	TFR[3]											
85	**1,887**	0.4	19.1	55.3	34.0	102.7	132.5	80.8	23.5	3.8	0.2	
86	**1,830**	0.3	19.3	54.2	33.6	96.7	127.0	81.9	23.7	3.0	0.2	
87	**1,793**	0.4	18.6	54.6	32.9	92.3	123.4	81.1	25.2	3.4	0.1	
88	**1,807**	0.4	17.4	53.6	32.8	91.2	124.3	82.2	26.7	4.2	0.1	
89	**1,876**	0.4	18.8	55.9	34.6	94.2	126.5	87.4	28.5	3.7	0.2	
90	**1,861**	0.4	19.8	57.4	36.2	92.4	124.2	85.4	29.9	3.9	0.2	
91	**1,861**	0.5	21.9	58.3	37.7	92.3	122.2	85.0	30.6	4.1	0.3	
92	**1,843**	0.5	21.9	55.6	35.8	90.5	120.9	87.1	30.0	4.4	0.1	
93	**1,790**	0.4	20.5	51.8	32.8	88.4	119.1	83.6	29.6	4.3	0.2	
94	**1,805**	0.4	18.8	54.8	32.6	86.1	121.8	85.0	30.6	4.7	0.2	
95	**1,793**	0.3	18.3	54.9	32.0	86.1	119.2	86.0	30.9	4.3	0.2	
96	**1,757**	0.3	16.5	48.5	28.1	81.3	117.0	87.3	32.5	5.0	0.2	
97	**1,708**	0.3	14.8	46.0	25.8	77.4	114.9	85.4	32.3	5.6	0.1	
98	**1,732**	0.2	14.8	46.4	25.4	78.6	112.7	91.5	32.7	5.2	0.2	
99	**1,718**	0.2	14.0	45.5	24.4	77.0	110.4	91.2	34.4	5.8	0.3	

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness

Notes: 1. Age-specific fertility rate refers to number of live births per 1,000 women in a specific age group.
2. The age-specific fertility rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 45-49 age groups respectively.
3. Total fertility rate (TFR) refers to average number of children a woman can expect to have in her lifetime, based on the fertility rates of a given year. TFR is equal to the sum of the age-specific fertility rates (ages 15 to 49).
Populations are estimated at June 30, as viewed at December 31 of each year.
Data include Alberta residents only.

Table A4 Age-Specific Fertility Rates[1,2] and Total Fertility Rate by Residence RHA, Alberta, 1997 - 1999

Residence RHA	TFR[3]	Age Group (Years)									
		<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44
1997											
1	2,208	0.5	17.8	63.5	35.3	109.6	153.7	95.7	39.9	7.2	0.2
2	1,940	0.3	14.1	53.4	30.0	98.2	146.8	86.8	22.0	3.7	0.4
3	1,685	0.0	9.7	32.7	18.9	60.4	106.9	101.7	41.3	7.3	0.4
4	1,551	0.1	9.9	33.3	18.9	58.2	97.0	91.3	38.1	6.8	0.1
5	1,882	0.0	9.6	39.8	21.2	90.6	167.0	76.8	18.3	2.5	0.0
6	1,942	0.5	20.3	60.8	35.7	101.7	144.6	75.8	27.3	3.4	0.0
7	1,517	0.2	5.6	28.1	14.3	73.4	127.3	61.7	22.7	3.9	0.0
8	1,826	0.8	12.1	40.9	22.7	85.8	139.4	85.3	28.2	3.7	0.0
9	2,159	0.0	16.0	77.1	39.1	125.7	162.7	75.3	25.8	3.3	0.0
10	1,533	0.3	12.2	38.7	22.7	63.5	100.2	83.1	31.5	5.3	0.2
11	2,011	0.6	11.1	38.5	21.4	103.7	161.5	86.3	23.2	6.1	0.0
12	2,045	0.2	23.9	51.5	35.0	118.8	147.5	77.6	26.7	3.6	0.0
13	1,908	0.3	17.7	52.2	31.1	105.4	138.2	79.1	21.5	6.2	0.0
14	2,051	0.0	28.6	68.0	42.8	139.5	128.9	75.8	19.1	3.9	0.0
15	2,373	0.0	46.1	116.3	73.0	149.0	144.6	82.3	20.9	5.0	0.0
16	1,717	0.6	16.4	79.3	42.2	94.3	103.6	74.2	25.1	3.9	0.0
17	3,404	2.0	62.3	163.3	101.7	198.3	202.0	105.1	58.6	15.0	0.0
Alberta	**1,708**	**0.3**	**13.9**	**44.7**	**25.8**	**77.4**	**114.9**	**85.4**	**32.3**	**5.6**	**0.1**
1998											
1	2,041	0.3	18.5	49.5	30.5	103.6	145.0	95.2	29.2	4.3	0.4
2	1,995	0.3	15.6	48.3	28.3	107.1	140.1	93.7	25.0	4.8	0.0
3	1,639	0.0	11.8	45.3	24.7	65.3	102.4	94.5	35.6	5.3	0.0
4	1,582	0.2	8.5	31.9	17.5	58.8	96.7	97.8	39.0	6.3	0.3
5	1,852	0.0	9.7	35.6	19.5	93.8	145.3	85.3	20.8	5.6	0.0
6	1,935	0.0	17.7	55.2	32.2	100.2	138.0	86.9	26.9	2.6	0.3
7	1,537	0.0	6.4	35.4	17.7	72.3	111.1	79.1	24.0	2.5	0.6
8	1,806	0.5	15.7	46.1	27.2	86.5	132.9	82.9	28.1	3.4	0.3
9	2,142	0.0	16.8	59.0	31.8	115.9	165.2	87.4	23.5	4.5	0.0
10	1,601	0.2	13.3	38.4	23.2	67.0	102.5	88.7	33.2	5.4	0.2
11	2,070	0.0	20.2	53.5	32.7	113.1	151.1	87.1	24.6	5.0	0.4
12	2,066	0.2	18.5	64.8	36.8	106.5	150.8	88.9	27.0	3.2	0.0
13	1,927	0.3	19.9	60.7	35.7	114.0	129.6	76.7	24.4	5.1	0.0
14	2,305	1.1	28.3	91.7	53.0	119.2	167.2	93.1	22.2	6.4	0.0
15	2,456	3.2	48.8	68.1	56.6	159.9	137.1	107.0	27.2	3.6	0.0
16	1,716	0.6	14.4	59.1	32.0	99.6	105.1	79.7	21.5	5.3	0.0
17	3,100	0.9	37.8	146.4	80.6	206.9	170.3	106.0	48.2	8.0	0.0
Alberta	**1,732**	**0.2**	**13.8**	**43.8**	**25.4**	**78.6**	**112.7**	**91.5**	**32.7**	**5.2**	**0.2**
1999											
1	2,067	0.2	15.1	52.0	29.7	107.9	143.6	96.6	31.6	3.8	0.2
2	1,940	0.3	16.5	56.9	31.9	101.5	135.1	92.5	22.7	3.9	0.3
3	1,560	0.4	10.9	42.1	23.4	52.1	102.1	94.6	35.1	4.7	0.0
4	1,557	0.1	9.4	29.7	17.2	56.5	92.9	95.8	41.6	7.0	0.4
5	1,827	0.4	7.5	46.8	22.6	89.6	143.0	77.8	28.8	3.6	0.0
6	1,965	0.4	14.7	55.7	30.4	104.5	131.4	95.7	26.7	4.1	0.2
7	1,538	0.0	6.2	25.1	13.6	76.8	120.4	74.6	18.8	2.9	0.6
8	1,823	0.0	14.0	42.5	24.8	82.2	135.0	90.9	27.6	3.9	0.3
9	2,152	0.6	24.0	72.4	42.3	135.0	144.4	78.2	27.6	3.1	0.0
10	1,589	0.3	12.4	36.5	21.9	64.1	100.0	88.8	36.1	6.7	0.3
11	2,205	0.0	17.2	55.6	31.6	113.6	160.0	100.7	29.4	4.9	0.7
12	2,038	0.4	19.4	55.9	33.1	107.0	153.0	84.8	25.9	3.4	0.3
13	2,022	0.0	17.1	58.8	33.3	115.6	140.6	85.2	25.2	4.3	0.3
14	2,034	0.0	20.9	69.5	39.7	125.8	132.0	70.7	30.8	6.3	1.6
15	2,259	1.5	32.4	122.8	65.8	160.1	120.6	80.1	18.4	6.8	0.0
16	1,687	0.0	16.9	50.6	30.2	96.3	113.9	76.6	19.5	1.0	0.0
17	2,945	0.9	39.0	130.7	73.2	198.1	173.5	97.2	34.1	12.9	0.0
Alberta	**1,718**	**0.2**	**13.0**	**42.4**	**24.4**	**77.0**	**110.4**	**91.2**	**34.4**	**5.8**	**0.3**

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes:
1. Age-specific fertility rate refers to number of live births per 1,000 women in a specific age group.
2. The age-specific fertility rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 45-49 age groups respectively.
3. Total fertility rate (TFR) refers to average number of children a woman can expect to have in her lifetime, based on the fertility rates of a given year. TFR is equal to the sum of the age-specific fertility rates (aged 15 to 49).

Populations are estimated at March 31, as viewed at September 30 of each year.
Regional Health Authority boundaries are current as of April, 1998
Data include Alberta residents only.

Table A5 Estimated Pregnancy (Live Births, Stillbirths, Spontaneous Abortions, and Induced Abortions) Rates by Age Group, Alberta, 1985 - 1999

Year	Age Group (years)											
	Total	<15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	>44	Unknown
Estimated pregnancies[1]												
86	**54,394**	78	1,834	3,185	5,019	14,835	19,769	11,214	3,031	383	25	40
87	**51,936**	85	1,690	3,113	4,803	13,223	18,863	11,309	3,133	453	37	30
88	**53,053**	90	1,696	3,334	5,030	12,911	19,063	11,883	3,461	559	21	35
89	**54,595**	102	1,736	3,379	5,115	12,783	19,217	12,921	3,841	534	46	36
90	**54,423**	97	1,754	3,407	5,161	12,624	18,510	13,117	4,233	632	27	22
91	**54,579**	116	1,928	3,463	5,391	12,615	17,807	13,352	4,569	665	39	25
92	**55,845**	143	2,179	3,489	5,668	12,852	17,514	13,978	4,863	746	43	38
93	**54,139**	119	2,224	3,459	5,683	12,531	16,384	13,592	4,985	787	35	23
94	**53,892**	115	2,039	3,600	5,639	12,172	16,132	13,641	5,245	878	34	36
95	**52,532**	113	2,007	3,487	5,494	11,874	15,416	13,313	5,363	880	42	37
96	**51,564**	84	1,946	3,298	5,244	11,401	15,073	12,979	5,672	1,014	55	42
97	**51,634**	88	1,903	3,371	5,274	11,566	15,043	12,617	5,804	1,162	50	30
98	**52,864**	90	1,976	3,479	5,455	11,942	15,150	12,955	5,951	1,184	82	55
99	**52,845**	73	1,890	3,331	5,221	12,056	15,092	12,784	6,216	1,295	74	34
Estimated pregnancy rate (per 1000 women in each age group)[2,3]												
	15-49	**<15**	**15-17**	**18-19**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**>44**	
86	**79.8**	0.9	33.3	83.4	53.8	125.6	149.7	96.9	31.7	5.4	0.4	
87	**76.2**	1.0	31.2	82.4	52.2	118.5	145.0	95.4	32.7	5.9	0.6	
88	**77.2**	1.0	32.0	86.8	55.0	120.9	148.3	97.9	35.2	6.9	0.3	
89	**78.6**	1.1	33.3	87.9	56.5	124.7	151.3	104.1	37.4	6.3	0.7	
90	**77.0**	1.1	33.4	90.9	57.3	124.7	148.1	103.0	39.2	7.1	0.4	
91	**76.1**	1.2	36.3	94.8	60.1	125.5	147.1	103.3	40.3	7.1	0.6	
92	**77.0**	1.5	40.1	96.7	62.7	129.9	150.3	107.0	41.2	7.8	0.6	
93	**74.1**	1.2	40.6	95.6	62.5	128.2	147.4	103.7	40.9	8.0	0.4	
94	**73.4**	1.1	36.7	98.6	61.3	127.8	152.1	105.5	42.1	8.5	0.4	
95	**71.2**	1.1	35.7	94.0	58.9	126.7	150.3	105.7	42.3	8.2	0.5	
96	**69.3**	0.8	33.5	88.2	54.9	122.7	148.8	107.0	44.1	9.0	0.6	
97	**68.3**	0.8	31.7	88.4	53.7	121.6	147.9	107.3	44.4	9.9	0.5	
98	**68.3**	0.8	31.6	87.8	53.4	121.4	145.5	113.0	44.8	9.6	0.8	
99	**66.7**	0.7	29.3	81.3	49.5	118.1	142.7	113.4	46.4	10.1	0.7	

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. Age-specific rate refers to number of estimated pregnancies per 1,000 women in a specific age group.
3. The age-specific rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 44-49 age groups respectively.
Populations are estimated at March 31, as viewed at September 30 of each year.
Data include Alberta residents only.

Table A6 Estimated Pregnancy (live births, stillbirths, spontaneous abortions, and induced abortions) Rates by Residence RHA, Alberta, 1985 - 1999

Residence RHA	Year 86	87	88	89	90	91	92	93	94	95	96	97	98	99
Estimated pregnancies[1]														
1	2,983	2,916	2,812	3,006	3,036	2,960	2,988	2,892	2,911	2,909	2,791	2,885	2,617	2,634
2	1,551	1,421	1,487	1,559	1,502	1,411	1,429	1,406	1,405	1,525	1,471	1,522	1,567	1,545
3	1,123	1,070	1,097	1,151	1,133	1,130	1,232	1,184	1,234	1,181	1,205	1,256	1,255	1,263
4	16,089	15,813	16,010	16,736	16,849	16,654	17,150	16,394	16,688	16,216	16,272	15,436	17,156	17,259
5	875	841	853	822	859	823	838	843	867	844	839	831	841	862
6	3,697	3,446	3,472	3,515	3,432	3,519	3,567	3,512	3,364	3,387	3,331	3,262	3,330	3,431
7	1,671	1,566	1,556	1,566	1,517	1,431	1,424	1,475	1,495	1,393	1,322	1,309	1,367	1,274
8	1,475	1,376	1,382	1,464	1,452	1,435	1,571	1,445	1,468	1,536	1,483	1,509	1,538	1,533
9	820	756	762	795	791	777	814	717	747	747	694	691	707	695
10	15,914	14,812	15,678	15,913	16,075	16,429	16,603	16,349	15,608	14,848	14,334	14,069	14,393	14,325
11	1,518	1,433	1,519	1,623	1,476	1,621	1,609	1,567	1,608	1,481	1,419	1,390	1,407	1,542
12	2,099	2,097	2,031	2,128	1,979	2,038	2,112	2,060	2,026	1,948	1,867	1,917	1,928	1,904
13	1,829	1,759	1,745	1,664	1,627	1,704	1,677	1,605	1,706	1,711	1,742	1,713	1,768	1,816
14	429	410	384	414	401	409	418	403	404	405	426	383	402	365
15	628	625	583	647	631	648	695	675	744	683	676	639	673	606
16	955	854	939	866	942	849	868	838	760	741	802	763	772	817
17	520	514	511	529	534	567	575	579	603	653	626	648	615	579
Unknown	111	109	84	61	66	49	49	49	131	314	327	203	108	124
Alberta	**54,287**	**51,818**	**52,905**	**54,459**	**54,302**	**54,454**	**55,619**	**53,993**	**53,769**	**52,522**	**51,627**	**51,426**	**52,444**	**52,574**
Rate per 1,000 women aged 15-49														
1	87.13	84.72	81.56	87.25	86.99	84.04	84.12	81.11	81.12	80.46	76.81	78.98	71.37	70.97
2	75.80	69.94	73.10	76.61	73.08	68.21	69.16	67.68	66.26	70.87	67.08	68.44	68.85	66.19
3	82.16	76.87	76.86	79.07	75.20	72.83	77.11	71.63	72.18	67.06	66.21	66.92	65.09	63.16
4	77.54	76.02	75.66	77.72	76.37	74.21	75.52	71.77	72.45	69.44	68.47	67.27	67.63	65.94
5	78.03	75.41	76.39	73.53	75.52	71.16	70.82	69.74	70.68	67.16	65.90	64.81	63.77	63.24
6	89.45	83.33	83.47	83.56	79.95	80.77	80.49	78.38	74.42	74.05	72.05	69.62	68.66	68.79
7	68.42	65.05	65.20	65.95	64.08	60.00	58.92	60.57	60.61	56.27	52.98	52.15	53.76	50.05
8	75.40	70.62	70.18	72.79	70.85	67.96	72.53	66.06	66.05	66.63	63.25	63.36	63.66	61.95
9	94.09	85.98	86.25	88.59	86.73	82.64	85.24	74.66	77.65	77.49	71.51	70.32	70.78	69.05
10	76.52	70.78	74.64	75.19	74.68	75.47	75.57	73.73	70.94	68.27	66.24	64.75	65.51	63.99
11	83.69	79.26	83.01	87.88	78.17	84.39	81.83	78.28	78.95	72.94	69.67	68.18	68.49	73.77
12	79.66	80.50	77.50	80.85	75.38	77.36	79.45	77.18	75.82	73.29	70.60	71.91	71.25	70.17
13[2]					76.22	79.21	77.61	75.08	79.36	77.02	76.15	73.47	73.40	73.54
14[2]					75.72	78.20	80.62	78.71	78.04	78.73	83.11	75.41	79.15	71.21
15	113.89	111.81	101.62	112.78	107.84	108.78	115.10	109.95	118.28	105.47	103.22	95.79	99.94	88.97
16	78.30	74.72	83.12	75.74	81.81	72.65	73.83	72.06	66.71	66.21	71.59	65.15	63.42	66.01
17	139.45	136.96	133.63	136.23	138.95	143.84	144.29	141.95	144.26	152.14	141.25	137.43	125.23	114.79
Alberta	**79.67**	**75.98**	**76.96**	**78.42**	**76.80**	**75.95**	**76.68**	**73.86**	**73.24**	**71.14**	**69.33**	**68.01**	**67.75**	**66.38**

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. Population estimations for regions 13 and 14 are not available for years 1985 through 1989.
Populations are estimated at March 31, as viewed at September 30 of each year.
Data include Alberta residents only.

Table A7 Mean Number of Live Births and Conceptions of Live Births per Day, by Month, Alberta, 1985 - 1999 Combined

Month	Live Births	Conceptions of Live Births
January	104.9	104.1
February	110.5	101.5
March	114.5	102.9
April	116.2	103.5
May	118.5	111.4
June	116.1	115.0
July	114.0	117.7
August	110.6	117.8
September	114.7	115.8
October	105.0	113.6
November	102.6	110.5
December	102.5	115.2

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Month of conception for each live birth was calculated from month of birth and gestational age at birth.

Table A8 Mean Maternal Age at First Live Birth, Stillbirth and Total Live Birth, Alberta and Canada, 1985 - 1999

Year	First Live Birth Alberta	Live Birth Alberta	Live Birth Canada[1]	Stillbirth Alberta
85	24.7	26.5	27.3	26.5
86	24.8	26.7	27.5	26.6
87	25.0	26.9	27.7	26.7
88	25.2	27.1	27.9	26.4
89	25.2	27.2	28.0	27.8
90	25.3	27.3	28.1	27.4
91	25.3	27.3	28.2	27.0
92	25.5	27.5	28.4	27.2
93	25.7	27.6	28.5	27.7
94	25.8	27.7	28.7	28.3
95	25.9	27.8	28.8	28.3
96	26.1	28.0	28.4	28.5
97	26.2	28.1	28.5	28.4
98	26.2	28.1	-	28.1
99	26.2	28.2	-	28.6

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Births and Deaths, 1995, Statistics Canada.
Births and Deaths, 1996, Statistics Canada (shelf tables).
Births and Deaths, 1997, Statistics Canada (shelf tables).

Note: 1. Canadian data for 1998 and 1999 are not available.

Table A9 Spontaneous Abortions, Rate per 1,000 Women and Rate per 100 Estimated pregnancies, by Maternal Age Group, Alberta, 1986 - 1999

Year	Age Group (Years)											
	15-49	10-14	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Unknown
Spontaneous Abortions												
86	**4,567**	13	150	248	398	1,148	1,583	908	391	75	11	40
87	**4,496**	7	148	235	383	1,070	1,507	972	404	102	21	30
88	**4,870**	22	161	284	445	1,096	1,604	1,089	461	110	8	35
89	**4,854**	14	201	287	488	999	1,560	1,157	478	102	20	36
90	**4,934**	17	177	280	457	1,066	1,473	1,217	527	144	11	22
91	**5,095**	21	196	297	493	1,091	1,463	1,281	564	143	14	25
92	**5,341**	14	203	292	495	1,138	1,495	1,315	636	182	29	37
93	**5,061**	20	242	338	580	1,019	1,329	1,280	598	202	10	23
94	**5,184**	18	175	335	510	1,100	1,354	1,250	688	211	17	36
95	**4,835**	16	180	280	460	985	1,323	1,138	655	201	20	37
96	**4,612**	15	176	259	435	901	1,212	1,101	661	222	24	41
97	**4,521**	13	151	268	419	882	1,195	1,104	629	221	28	30
98	**4,712**	8	155	285	440	913	1,253	1,100	679	254	37	28
99	**4,617**	7	149	254	403	860	1,227	1,101	699	260	29	31
Rate per 1,000 Women in Each Age Group												
86	**6.7**	0.1	2.7	6.5	4.3	9.7	12.0	7.8	4.1	1.1	0.2	
87	**6.6**	0.1	2.7	6.2	4.2	9.6	11.6	8.2	4.2	1.3	0.4	
88	**7.1**	0.3	3.0	7.4	4.9	10.3	12.5	9.0	4.7	1.4	0.1	
89	**7.0**	0.2	3.9	7.5	5.4	9.7	12.3	9.3	4.7	1.2	0.3	
90	**7.0**	0.2	3.4	7.5	5.1	10.5	11.8	9.6	4.9	1.6	0.2	
91	**7.1**	0.2	3.7	8.1	5.5	10.9	12.1	9.9	5.0	1.5	0.2	
92	**7.4**	0.1	3.7	8.1	5.5	11.5	12.8	10.1	5.4	1.9	0.4	
93	**6.9**	0.2	4.4	9.3	6.4	10.4	12.0	9.8	4.9	2.1	0.1	
94	**7.1**	0.2	3.1	9.2	5.5	11.5	12.8	9.7	5.5	2.1	0.2	
95	**6.5**	0.2	3.2	7.5	4.9	10.5	12.9	9.0	5.2	1.9	0.2	
96	**6.2**	0.1	3.0	6.9	4.6	9.7	12.0	9.1	5.1	2.0	0.3	
97	**6.0**	0.1	2.5	7.0	4.3	9.3	11.7	9.4	4.8	1.9	0.3	
98	**6.1**	0.1	2.5	7.2	4.3	9.3	12.0	9.6	5.1	2.1	0.4	
99	**5.8**	0.1	2.3	6.2	3.8	8.4	11.6	9.8	5.2	2.0	0.3	
Rate per 100 Estimated Pregnancies[1] in Each Age Group												
86	**8.4**	16.7	8.2	7.8	7.9	7.7	8.0	8.1	12.9	19.6	44.0	
87	**8.7**	8.2	8.8	7.5	8.0	8.1	8.0	8.6	12.9	22.5	56.8	
88	**9.2**	24.4	9.5	8.5	8.8	8.5	8.4	9.2	13.3	19.7	38.1	
89	**8.9**	13.7	11.6	8.5	9.5	7.8	8.1	9.0	12.4	19.1	43.5	
90	**9.1**	17.5	10.1	8.2	8.9	8.4	8.0	9.3	12.4	22.8	40.7	
91	**9.3**	18.1	10.2	8.6	9.1	8.6	8.2	9.6	12.3	21.5	35.9	
92	**9.6**	9.8	9.3	8.4	8.7	8.9	8.5	9.4	13.1	24.4	67.4	
93	**9.3**	16.8	10.9	9.8	10.2	8.1	8.1	9.4	12.0	25.7	28.6	
94	**9.6**	15.7	8.6	9.3	9.0	9.0	8.4	9.2	13.1	24.0	50.0	
95	**9.2**	14.2	9.0	8.0	8.4	8.3	8.6	8.5	12.2	22.8	47.6	
96	**8.9**	17.9	9.0	7.9	8.3	7.9	8.0	8.5	11.7	21.9	43.6	
97	**8.8**	14.8	7.9	8.0	7.9	7.6	7.9	8.8	10.8	19.0	56.0	
98	**8.9**	8.9	7.8	8.2	8.1	7.6	8.3	8.5	11.4	21.5	45.1	
99	**8.7**	9.6	7.9	7.6	7.7	7.1	8.1	8.6	11.2	20.1	39.2	

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. The age-specific rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 44-49 age groups respectively.
Populations are estimated at March 31, as viewed at September 30 of each year.
Data include Alberta residents only.

Table A10 Spontaneous Abortion Rates (per 100 Estimated Pregnancies, and per 1,000 Women aged 15-49) by Residence RHA, Alberta, 1986 - 1999

Residence RHA	Year 86	87	88	89	90	91	92	93	94	95	96	97	98	99
Spontaneous Abortions														
1	268	242	254	291	372	370	300	272	302	308	338	312	310	250
2	81	94	114	154	112	109	83	99	133	112	125	132	136	143
3	91	92	116	109	84	100	109	93	103	112	114	97	116	112
4	1,340	1,272	1,477	1,409	1,528	1,640	1,598	1,420	1,593	1,445	1,493	1,429	1,506	1,534
5	74	64	82	91	92	77	67	85	109	77	73	87	83	83
6	289	290	346	315	348	322	311	269	303	352	288	291	295	297
7	195	134	159	162	154	149	150	154	135	134	109	113	144	125
8	134	140	105	132	119	102	140	132	155	120	106	107	127	129
9	66	46	53	53	77	59	56	57	65	54	49	31	46	50
10	1,397	1,466	1,451	1,439	1,450	1,482	1,779	1,755	1,560	1,442	1,259	1,212	1,243	1,162
11	107	103	131	160	115	107	135	130	140	130	80	117	101	148
12	168	188	198	216	153	184	188	175	193	164	162	180	168	174
13	160	155	165	115	133	172	144	153	176	154	174	182	188	180
14	18	18	21	36	23	34	53	42	40	33	46	42	47	43
15	55	45	38	34	48	62	81	72	67	69	74	57	79	52
16	84	99	103	88	90	77	93	92	60	61	63	53	57	81
17	40	48	57	50	36	49	54	61	50	68	59	79	66	54
Unknown	68	63	30	26	21	14	19	29	107	203	187	141	87	108
Alberta	**4,635**	**4,559**	**4,900**	**4,880**	**4,955**	**5,109**	**5,360**	**5,090**	**5,291**	**5,038**	**4,799**	**4,662**	**4,799**	**4,725**
Rate per 1000 Women Aged 15-49														
1	7.8	7.0	7.4	8.4	10.7	10.5	8.4	7.6	8.4	8.5	9.3	8.5	8.5	6.7
2	4.0	4.6	5.6	7.6	5.4	5.3	4.0	4.8	6.3	5.2	5.7	5.9	6.0	6.1
3	6.7	6.6	8.1	7.5	5.6	6.4	6.8	5.6	6.0	6.4	6.3	5.2	6.0	5.6
4	6.5	6.1	7.0	6.5	6.9	7.3	7.0	6.2	6.9	6.2	6.3	5.8	5.9	5.9
5	6.6	5.7	7.3	8.1	8.1	6.7	5.7	7.0	8.9	6.1	5.7	6.8	6.3	6.1
6	7.0	7.0	8.3	7.5	8.1	7.4	7.0	6.0	6.7	7.7	6.2	6.2	6.1	6.0
7	8.0	5.6	6.7	6.8	6.5	6.2	6.2	6.3	5.5	5.4	4.4	4.5	5.7	4.9
8	6.8	7.2	5.3	6.6	5.8	4.8	6.5	6.0	7.0	5.2	4.5	4.5	5.3	5.2
9	7.6	5.2	6.0	5.9	8.4	6.3	5.9	5.9	6.8	5.6	5.0	3.2	4.6	5.0
10	6.7	7.0	6.9	6.8	6.7	6.8	8.1	7.9	7.1	6.6	5.8	5.6	5.7	5.2
11	5.9	5.7	7.2	8.7	6.1	5.6	6.9	6.5	6.9	6.4	3.9	5.7	4.9	7.1
12	6.4	7.2	7.6	8.2	5.8	7.0	7.1	6.6	7.2	6.2	6.1	6.8	6.2	6.4
13[2]					6.2	8.0	6.7	7.2	8.2	6.9	7.6	7.8	7.8	7.3
14[2]					4.3	6.5	10.2	8.2	7.7	6.4	9.0	8.3	9.3	8.4
15	10.0	8.1	6.6	5.9	8.2	10.4	13.4	11.7	10.7	10.7	11.3	8.5	11.7	7.6
16	6.9	8.7	9.1	7.7	7.8	6.6	7.9	7.9	5.3	5.5	5.6	4.5	4.7	6.5
17	10.7	12.8	14.9	12.9	9.4	12.4	13.6	15.0	12.0	15.8	13.3	16.8	13.4	10.7
Alberta	**6.8**	**6.7**	**7.1**	**7.0**	**7.0**	**7.1**	**7.4**	**7.0**	**7.2**	**6.8**	**6.4**	**6.2**	**6.2**	**6.0**
Rate per 100 Estimated Pregnancies														
1	9.0	8.3	9.0	9.7	12.3	12.5	10.0	9.4	10.4	10.6	12.1	10.8	11.8	9.5
2	5.2	6.6	7.7	9.9	7.5	7.7	5.8	7.0	9.5	7.3	8.5	8.7	8.7	9.3
3	8.1	8.6	10.6	9.5	7.4	8.8	8.8	7.9	8.3	9.5	9.5	7.7	9.2	8.9
4	8.3	8.0	9.2	8.4	9.1	9.8	9.3	8.7	9.5	8.9	9.2	8.7	8.8	8.9
5	8.5	7.6	9.6	11.1	10.7	9.4	8.0	10.1	12.6	9.1	8.7	10.5	9.9	9.6
6	7.8	8.4	10.0	9.0	10.1	9.2	8.7	7.7	9.0	10.4	8.6	8.9	8.9	8.7
7	11.7	8.6	10.2	10.3	10.2	10.4	10.5	10.4	9.0	9.6	8.2	8.6	10.5	9.8
8	9.1	10.2	7.6	9.0	8.2	7.1	8.9	9.1	10.6	7.8	7.1	7.1	8.3	8.4
9	8.0	6.1	7.0	6.7	9.7	7.6	6.9	7.9	8.7	7.2	7.1	4.5	6.5	7.2
10	8.8	9.9	9.3	9.0	9.0	9.0	10.7	10.7	10.0	9.7	8.8	8.6	8.6	8.1
11	7.0	7.2	8.6	9.9	7.8	6.6	8.4	8.3	8.7	8.8	5.6	8.4	7.2	9.6
12	8.0	9.0	9.7	10.2	7.7	9.0	8.9	8.5	9.5	8.4	8.7	9.4	8.7	9.1
13	8.7	8.8	9.5	6.9	8.2	10.1	8.6	9.5	10.3	9.0	10.0	10.6	10.6	9.9
14	4.2	4.4	5.5	8.7	5.7	8.3	12.7	10.4	9.9	8.1	10.8	11.0	11.7	11.8
15	8.8	7.2	6.5	5.3	7.6	9.6	11.7	10.7	9.0	10.1	10.9	8.9	11.7	8.6
16	8.8	11.6	11.0	10.2	9.6	9.1	10.7	11.0	7.9	8.2	7.9	6.9	7.4	9.9
17	7.7	9.3	11.2	9.5	6.7	8.6	9.4	10.5	8.3	10.4	9.4	12.2	10.7	9.3
Alberta	**8.5**	**8.8**	**9.3**	**9.0**	**9.1**	**9.4**	**9.6**	**9.4**	**9.8**	**9.6**	**9.3**	**9.1**	**9.2**	**9.0**

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.
Clinics Files, Alberta Health and Wellness.
Fee-for-Services Claims Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Estimated pregnancies include live births, stillbirths, spontaneous abortions, and induced abortions.
2. Population estimations for regions 13 and 14 are not available for years 1985 through 1989.
Populations are estimated at March 31, as viewed at September 30 of each year.
Data include Alberta residents only.

Table A11 Total Births by Level of Hospital, Alberta, 1986 - 1998

Level of Hospital	Year 86	87	88	89	90	91	92	93	94	95	96	97	98
Level III													
Royal Alexandra	5,833	5,220	4,816	4,740	4,717	4,592	4,477	4,623	4,620	4,885	5,089	4,709	4,624
University of Alberta	2,262	2,578	3,026	2,803	2,999	2,909	2,906	2,798	2,521	1,223	4	10	6
Foothills	3,935	3,914	3,773	3,727	3,448	3,286	3,437	3,264	3,264	4,368	4,404	4,425	4,381
Total	**12,030**	**11,712**	**11,615**	**11,270**	**11,164**	**10,787**	**10,820**	**10,685**	**10,405**	**10,476**	**9,497**	**9,144**	**9,011**
Percent of Total Births	**27.4**	**27.7**	**27.4**	**26.0**	**25.7**	**25.0**	**25.6**	**26.4**	**25.9**	**27.0**	**24.4**	**24.8**	**23.6**
Level II													
Grande Prairie	0	0	0	0	0	0	0	0	0	1,023	1,005	1,032	1,078
Charles Camsell	1,021	913	934	900	858	756	619	189	0	0	0	0	0
Misericordia	3,447	3,141	3,470	3,141	3,113	3,007	2,906	2,699	2,569	2,598	2,602	2,478	2,585
Edmonton General/Grey Nuns	1,829	1,781	1,924	2,551	2,727	3,095	2,877	2,944	2,843	3,148	3,576	3,378	3,529
Calgary General/Peter Lougheed	3,030	2,797	2,584	3,087	3,339	3,405	3,593	3,619	3,641	3,734	3,769	3,739	3,857
Holy Cross/Rockyview	3,980	3,842	3,965	4,384	4,665	4,648	4,439	4,092	4,056	3,950	3,796	3,763	4,051
Grace	2,003	2,236	2,503	2,118	1,975	1,991	1,652	1,480	1,478	87	0	0	0
Lethbridge	1,178	1,143	1,113	1,442	1,454	1,460	1,634	1,643	1,695	1,670	1,587	1,696	1,608
Medicine Hat	987	885	909	996	969	923	898	853	831	936	844	909	947
Red Deer	1,949	1,785	1,743	1,862	1,799	1,892	1,917	1,890	1,769	1,725	1,688	1,649	1,731
Total	**19,424**	**18,523**	**19,145**	**20,481**	**20,899**	**21,177**	**20,535**	**19,409**	**18,882**	**18,871**	**18,867**	**18,644**	**19,386**
Percent of Total Births	**44.2**	**43.8**	**45.1**	**47.3**	**48.2**	**49.1**	**48.7**	**47.9**	**47.0**	**48.6**	**48.4**	**50.5**	**50.8**
Level I													
North	9,313	9,009	8,717	8,912	8,532	8,653	8,450	8,241	8,557	7,182	8,064	6,982	7,442
South	2,967	2,919	2,805	2,514	2,640	2,337	2,282	2,086	2,111	2,106	2,282	1,858	1,934
Total	**12,280**	**11,928**	**11,522**	**11,426**	**11,172**	**10,990**	**10,732**	**10,327**	**10,668**	**9,288**	**10,346**	**8,840**	**9,376**
Percent of Total Births	**28.0**	**28.2**	**27.1**	**26.4**	**25.7**	**25.5**	**25.4**	**25.5**	**26.5**	**23.9**	**26.6**	**24.0**	**24.6**
Out-of-Hospital Births	182	154	177	151	163	139	116	108	235	202	233	257	379
Percent of Total Births	**0.4**	**0.4**	**0.4**	**0.3**	**0.4**	**0.3**	**0.3**	**0.3**	**0.6**	**0.5**	**0.6**	**0.7**	**1.0**
Alberta	**43,916**	**42,317**	**42,459**	**43,328**	**43,398**	**43,093**	**42,203**	**40,529**	**40,190**	**38,837**	**38,943**	**36,885**	**38,152**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A12 Stillbirths and Stillbirth Rates by Maternal Age Group, Alberta, 1985 - 1999

Year	Total	Age Group (Years)						
		15-19	20-24	25-29	30-34	35-39	>39	Unknown
Stillbirths								
85	**253**	26	60	97	48	19	3	0
86	**266**	24	71	88	64	15	4	0
87	**253**	36	59	75	61	22	0	0
88	**296**	35	67	114	61	17	2	0
89	**254**	20	46	96	64	25	3	0
90	**296**	24	76	87	73	31	5	0
91	**309**	26	86	85	78	29	5	0
92	**278**	28	70	80	63	34	3	0
93	**267**	26	56	79	70	33	3	0
94	**266**	24	54	68	77	35	8	0
95	**262**	27	46	77	72	34	6	0
96	**236**	21	41	70	60	38	6	0
97	**249**	16	51	77	56	45	4	0
98	**191**	22	32	53	52	25	6	1
99	**267**	20	51	79	66	39	11	1
Stillbirths (per 1,000 Total Births)								
85	**5.8**	8.4	4.9	5.7	5.4	8.9		
86	**6.1**	7.6	6.2	5.2	6.7	6.6		
87	**6.0**	11.7	5.7	4.7	6.3	9.0		
88	**7.1**	11.5	6.8	7.1	6.1	6.4		
89	**5.9**	6.4	4.7	5.9	5.9	8.5		
90	**6.9**	7.3	8.1	5.6	6.7	9.5		
91	**7.2**	7.6	9.2	5.7	7.0	8.3		
92	**6.6**	8.6	7.8	5.6	5.5	9.5		
93	**6.7**	8.6	6.4	5.9	6.4	9.0		
94	**6.7**	7.9	6.5	5.2	7.0	9.1		
95	**6.8**	9.0	5.7	6.3	6.6	8.6		
96	**6.3**	7.8	5.4	5.9	5.6	9.0		
97	**6.8**	6.3	6.9	6.5	5.6	10.5		
98	**5.1**	8.4	4.1	4.5	4.9	5.7		
99	**7.0**	7.7	6.4	6.7	6.4	8.4		

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.

Notes: Data include Alberta residents only.

Table A13 Stillbirths by Birth Weight Categories, Alberta, 1985 - 1999

Year	Birth Weight (Grams)					
	<500	<1000	<1500	<2500	≥4000	≥4500
Stillbirths						
85	29	83	110	161	8	3
86	53	101	127	185	6	2
87	51	98	122	180	6	2
88	73	150	177	217	3	1
89	56	115	137	181	2	1
90	68	136	166	219	4	0
91	101	156	188	240	4	0
92	75	119	150	208	3	1
93	68	121	145	186	8	1
94	61	120	140	188	3	1
95	85	131	151	201	6	4
96	69	116	134	173	7	3
97	72	133	153	191	6	3
98	74	107	118	146	7	2
99	90	138	159	197	7	3
Percentage of Stillbirths						
85	11.4	32.5	43.1	63.1	3.1	1.2
86	19.9	37.8	47.6	69.3	2.2	0.7
87	20.2	38.7	48.2	71.1	2.4	0.8
88	24.6	50.5	59.6	73.1	1.0	0.3
89	22.0	45.3	53.9	71.3	0.8	0.4
90	23.0	45.9	56.1	74.0	1.4	0.3
91	32.6	50.3	60.6	77.4	1.3	0.3
92	26.9	42.7	53.8	74.6	1.1	0.4
93	25.5	45.3	54.3	69.7	3.0	1.5
94	22.9	45.1	52.6	70.7	1.1	1.1
95	32.4	50.0	57.6	76.7	2.3	1.1
96	29.2	49.2	56.8	73.3	3.0	0.8
97	28.9	53.4	61.4	76.7	2.4	1.2
98	38.7	56.0	61.8	76.4	3.7	0.0
99	33.7	51.7	59.6	73.8	2.6	0.4
Rate (per 100 Total Births in Each Weight Category)						
85	100.0	33.7	22.7	6.4	0.2	0.4
86	100.0	39.1	26.7	7.2	0.1	0.3
87	100.0	38.9	25.4	7.3	0.1	0.3
88	100.0	49.5	31.6	8.3	0.1	0.2
89	100.0	37.5	25.6	6.7	0.0	0.1
90	61.8	43.3	29.9	8.0	0.1	0.0
91	78.9	49.7	34.0	9.0	0.1	0.0
92	72.1	40.3	28.2	7.9	0.1	0.1
93	68.0	44.5	31.6	7.6	0.2	0.1
94	59.8	40.3	27.8	7.8	0.1	0.2
95	65.9	40.9	28.9	8.0	0.1	0.6
96	66.3	38.7	25.7	7.0	0.2	0.4
97	67.9	45.5	29.4	7.8	0.1	0.5
98	72.5	39.3	24.3	5.9	0.2	0.3
99	74.4	42.9	29.7	8.1	0.1	0.4

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.

Note: Data include Alberta residents only.

Table A14 Stillbirths by Birth Weight Distribution and Time of Death, Alberta, 1998

Birth Weight (grams)	Antepartum Deaths				Intrapartum Deaths				Stillbirths[2]	Live Births[3]	Ratio[4]
	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]	Prior to Hospital Admission	In Hospital	Total	Total Corrected[1]			
<500	35	5	40	35	0	37	37	22	77	30	2,567
500 - 749	7	2	9	6	0	20	20	12	29	60	483
750 - 999	2	0	2	2	0	4	4	1	6	78	77
1000 - 1249	6	0	6	5	0	0	0	0	6	96	63
1250 - 1499	3	1	4	4	0	1	1	1	5	107	47
1500 - 1749	4	1	5	5	0	1	1	1	6	189	32
1750 - 1999	6	1	7	7	0	0	0	0	7	272	26
2000 - 2499	16	0	16	14	1	0	1	1	17	1,502	11
2500 - 3999	36	1	37	32	0	2	2	1	39	30,645	1
≥4000	6	0	6	6	0	1	1	1	7	4,638	2
Total	**121**	**11**	**132**	**116**	**1**	**66**	**67**	**40**	**199**	**37,617**	**5**

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:

1. Major anomalies excluded
2. Total Antepartum Deaths + Total Intrapartum Deaths (2 Stillbirths not weighed have been excluded.)
3. Live births for each weight category from Alberta Health (1998) Vital Statistics Annual Review; 2 Live births with no specified weight.
4. Ratio: Stillbirths/Live births = (Total Antepartum Deaths + Total Intrapartum Deaths)/Live births X 1000.

Table A15 Number and Rate (per 1,000 Total Births) of Selected Congenital Anomalies, Alberta, 1985 - 1999

Year	Total Births[1]	All Anomalies[2]		Neural Tube Defects[4]		Heart Septal[5]		Down Syndrome[6]	
		Cases	Rate[3]	Cases	Rate[3]	Cases	Rate[3]	Cases	Rate[3]
85	43,580	1,779	40.8	48	1.10	180	4.13	46	1.06
86	43,583	1,906	43.7	49	1.12	235	5.39	38	0.87
87	41,966	1,813	43.2	33	0.79	252	6.00	41	0.98
88	41,976	2,005	47.8	41	0.98	289	6.88	39	0.93
89	43,239	2,032	47.0	37	0.86	239	5.53	45	1.04
90	42,927	2,084	48.5	31	0.72	281	6.55	53	1.23
91	42,675	1,863	43.7	35	0.82	245	5.74	53	1.24
92	41,945	1,847	44.0	36	0.86	229	5.46	37	0.88
93	40,172	1,518	37.8	30	0.75	215	5.35	45	1.12
94	39,722	1,490	37.5	30	0.76	184	4.63	44	1.11
95	38,788	1,275	32.9	42	1.08	167	4.31	50	1.29
96	37,712	1,194	31.7	23	0.61	181	4.80	32	0.85
97	36,800	1,187	32.3	39	1.06	166	4.51	56	1.52
98	37,860	1,255	33.1	30	0.79	166	4.38	72	1.90
99	38,074	1,186	31.1	25	0.66	146	3.83	60	1.58

Source: Alberta Congenital Anomalies Surveillance System, 1980-99, November 2000 release.

Notes:
1. Total Births = Live Births + Stillbirths
2. Includes all congenital anomalies in and outside ICD-9 Chapter XIV. The number of patients was counted; one patient could have more than one diagnostic category of defects.
3. Per 1,000 total births in each age group.
4. ICD-9 diagnostic codes 740.0-742.0.
5. ICD-9 diagnostic codes 745.0-745.9.
6. ICD-9 diagnostic code 758.0.

Data include Alberta residents only.

Table A16 Selected Congenital Anomalies and Rates (per 1,000 Live Births) by Maternal Age, Alberta, 1985 - 1999 Combined

Maternal Age Group (Years)	**Live Births**	**All Anomalies[1]**		**Neural Tube Defects[3]**		**Heart Septal[4]**		**Down Syndrome[5]**	
		Cases	**Rate[2]**	**Cases**	**Rate[2]**	**Cases**	**Rate[2]**	**Cases**	**Rate[2]**
< 20	45,129	1,734	38.4	29	0.64	241	5.34	24	0.53
20-24	136,259	4,919	36.1	91	0.67	644	4.73	78	0.57
25-29	211,538	8,043	38.0	122	0.58	1,004	4.75	143	0.68
30-34	156,108	6,132	39.3	97	0.62	776	4.97	193	1.24
35-39	51,293	2,163	42.2	25	0.49	328	6.39	135	2.63
≥40	6,733	335	49.8	2	0.30	53	7.87	52	7.72
Unknown	24	4		0		1		0	
Total	**607,084**	**23,330**	**38.4**	**366**	**0.60**	**3,047**	**5.02**	**625**	**1.03**

Source: Alberta Congenital Anomalies Surveillance System, 1980-99, November 2000 release.

Notes:
1. Includes all congenital anomalies in and outside ICD-9 Chapter XIV. The number of patients was counted; one patient could have more than one diagnostic category of defects.
2. Per 1,000 live births in each age group.
3. ICD-9 diagnostic codes 740.0-742.0.
4. ICD-9 diagnostic codes 745.0-745.9.
5. ICD-9 diagnostic code 758.0.

Data include Alberta residents only.

Table A17 Live Births by Birth Weight Categories, Alberta, 1985 - 1999

Year	Birth Weight (Grams)					
	<500	<1000	<1500	<2500	≥4000	≥4500
Live Births						
85	0	163	374	2,354	4,691	679
86	0	157	349	2,377	4,813	728
87	0	154	359	2,277	4,541	684
88	0	153	383	2,413	4,442	583
89	0	192	399	2,528	4,703	700
90	42	178	389	2,513	4,745	712
91	27	158	365	2,440	4,656	651
92	29	176	382	2,434	4,766	691
93	32	151	314	2,263	4,605	719
94	41	178	364	2,227	4,493	640
95	44	189	371	2,310	4,372	646
96	35	184	388	2,281	4,364	697
97	34	159	368	2,253	4,174	634
98	28	165	368	2,331	4,636	642
99	31	184	376	2,245	4,766	766
Percentage of Live Births						
85	0.00	0.38	0.86	5.43	10.83	1.57
86	0.00	0.36	0.81	5.49	11.11	1.68
87	0.00	0.37	0.86	5.46	10.88	1.64
88	0.00	0.37	0.92	5.79	10.66	1.40
89	0.00	0.45	0.93	5.88	10.94	1.63
90	0.10	0.42	0.91	5.89	11.13	1.67
91	0.06	0.37	0.86	5.76	10.99	1.54
92	0.07	0.42	0.92	5.84	11.44	1.66
93	0.08	0.38	0.79	5.67	11.54	1.80
94	0.10	0.45	0.92	5.64	11.39	1.62
95	0.11	0.49	0.96	6.00	11.35	1.68
96	0.09	0.49	1.04	6.09	11.64	1.86
97	0.09	0.44	1.01	6.16	11.42	1.73
98	0.07	0.44	0.98	6.20	12.32	1.71
99	0.08	0.49	0.99	5.94	12.61	2.03

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A18 Low Birth Weight Rate for Singleton Term Births, Alberta, 1985 - 1999

Year	Total Live Births	Live Singleton Term Births	Percent Live Singleton Term Births	Singleton Term Low Birth Weight Births	Singleton Term Low Birth Weight Rate
85	43,327	39,874	92.0	744	1.9
86	43,323	40,026	92.4	793	2.0
87	41,722	38,473	92.2	726	1.9
88	41,683	38,393	92.1	762	2.0
89	42,985	39,615	92.2	793	2.0
90	42,634	39,222	92.0	811	2.1
91	42,371	39,034	92.1	803	2.1
92	41,673	38,314	91.9	764	2.0
93	39,906	36,736	92.1	734	2.0
94	39,459	36,308	92.0	651	1.8
95	38,529	35,384	91.8	668	1.9
96	37,476	34,321	91.6	651	1.9
97	36,551	33,452	91.5	636	1.9
98	37,615	34,293	91.2	650	1.9
99	37,797	34,346	90.9	543	1.6

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Date include Alberta residents only.

Table A19 Low Birth Weight (<2500 grams) Births by Term/Pre-term and Singleton/Multiple, Alberta, 1985 - 1999

Year	Low birth weight (LBW) cases	Term Low Birth Weight Births						Pre-Term Low Birth Weight Births					
		Singleton		Multiple		Total		Singleton		Multiple		Total	
	Total	Cases	% of LBW Births	Cases	% of LBW Births	Cases	% of LBW Births	Cases	% of LBW Births	Cases	% of LBW Births	Cases	% of LBW Births
85	**2,354**	744	31.6	122	5.2	866	36.8	1,195	50.8	293	12.4	1,488	63.2
86	**2,377**	793	33.4	111	4.7	904	38.0	1,174	49.4	297	12.5	1,471	61.9
87	**2,277**	726	31.9	102	4.5	828	36.4	1,152	50.6	295	13.0	1,447	63.5
88	**2,413**	762	31.6	87	3.6	849	35.2	1,224	50.7	340	14.1	1,564	64.8
89	**2,528**	793	31.4	147	5.8	940	37.2	1,258	49.8	329	13.0	1,587	62.8
90	**2,513**	811	32.3	86	3.4	897	35.7	1,243	49.5	372	14.8	1,615	64.3
91	**2,440**	803	32.9	119	4.9	922	37.8	1,192	48.9	326	13.4	1,518	62.2
92	**2,434**	764	31.4	120	4.9	884	36.3	1,179	48.4	368	15.1	1,547	63.6
93	**2,263**	734	32.4	102	4.5	836	36.9	1,132	50.0	296	13.1	1,428	63.1
94	**2,227**	651	29.2	114	5.1	765	34.4	1,146	51.5	317	14.2	1,463	65.7
95	**2,310**	668	28.9	84	3.6	752	32.6	1,163	50.3	395	17.1	1,558	67.4
96	**2,281**	651	28.5	93	4.1	744	32.6	1,145	50.2	392	17.2	1,537	67.4
97	**2,253**	636	28.2	93	4.1	729	32.4	1,104	49.0	420	18.6	1,524	67.6
98	**2,331**	650	27.9	99	4.2	749	32.1	1,144	49.1	438	18.8	1,582	67.9
99	**2,245**	543	24.2	95	4.2	638	28.4	1,192	53.1	415	18.5	1,607	71.6

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A20 Low Birth Weight (<2500 grams) Births by Residence and Facility RHA, Alberta, 1985 - 1999

RHA	Year														
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Residence															
1	114	129	126	120	129	161	127	120	128	133	129	122	121	98	129
2	66	51	53	60	63	59	62	54	61	45	77	63	61	73	75
3	49	46	33	54	35	64	58	49	62	55	44	37	68	49	59
4	708	701	696	748	795	838	760	741	695	675	752	750	754	812	729
5	36	24	33	42	36	36	35	30	32	32	42	30	31	34	23
6	157	175	168	144	190	151	152	163	168	148	165	182	143	165	146
7	59	75	74	67	81	68	67	59	60	55	60	52	64	50	59
8	72	61	55	66	72	61	72	71	62	68	72	49	58	66	86
9	45	36	31	31	35	36	33	34	29	38	41	39	37	33	31
10	687	740	709	721	744	721	747	750	628	646	640	641	605	640	584
11	66	74	59	80	70	67	75	91	64	79	57	61	57	58	66
12	98	95	87	96	88	77	84	92	94	79	78	82	89	78	76
13	78	72	54	74	84	66	71	74	65	67	68	64	52	77	76
14	23	15	17	21	16	13	18	13	18	13	17	27	21	12	12
15	28	27	27	25	32	29	30	30	35	37	28	34	27	34	26
16	47	32	34	40	34	37	28	37	36	28	21	30	34	22	36
17	20	23	21	24	24	29	21	26	26	29	19	18	30	29	32
Unknown	1	1	0	0	0	0	0	0	0	0	0	0	1	1	0
Alberta	**2,354**	**2,377**	**2,277**	**2,413**	**2,528**	**2,513**	**2,440**	**2,434**	**2,263**	**2,227**	**2,310**	**2,281**	**2,253**	**2,331**	**2,245**
Facility															
1	102	127	118	105	122	151	120	105	106	129	118	112	105	103	118
2	58	43	34	54	44	37	45	41	53	35	66	44	50	53	53
3	12	16	12	12	11	21	16	10	14	12	11	6	17	10	11
4	810	774	783	846	878	954	868	844	818	776	864	848	878	919	856
5	16	9	13	7	14	15	12	7	13	5	7	7	6	4	4
6	107	133	128	129	152	117	120	126	117	121	119	136	106	121	114
7	33	29	39	24	28	24	26	27	26	21	19	18	18	13	14
8	25	15	17	17	23	15	21	19	17	17	9	6	9	11	14
9	23	16	20	13	17	13	19	13	15	16	18	23	21	15	16
10	975	1,053	967	1,032	1,073	1,014	1,015	1,075	942	927	922	947	908	956	900
11	31	27	9	26	26	21	31	22	15	22	17	11	10	7	14
12	41	36	34	30	29	26	29	35	31	39	33	27	26	26	20
13	46	40	30	46	40	41	50	46	35	46	63	42	40	49	49
14	15	13	14	16	14	6	17	10	14	13	12	13	11	3	8
15	15	10	20	9	17	16	13	11	8	13	5	9	10	7	9
16	32	25	30	32	28	26	25	27	27	22	17	20	23	18	32
17	13	11	9	15	12	16	13	16	12	13	10	12	15	16	13
Alberta	**2,354**	**2,377**	**2,277**	**2,413**	**2,528**	**2,513**	**2,440**	**2,434**	**2,263**	**2,227**	**2,310**	**2,281**	**2,253**	**2,331**	**2,245**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998

Data include Alberta residents only.

Table A21 Low Birth Weight, Pre-term, and High Birth Weight Births by Residence and Facility RHA, Alberta, 1997 - 1999 combined

RHA		Low Birth Weight		Preterm		High Birth Weight	
	Live Births	Cases	%	Cases	%	Cases	%
Residence							
1	6,363	348	5.5	420	6.6	814	12.8
2	3,653	209	5.7	244	6.7	445	12.2
3	2,660	176	6.6	182	6.8	274	10.3
4	34,401	2,295	6.7	2,680	7.8	3,630	10.6
5	1,888	88	4.7	124	6.6	260	13.8
6	7,693	454	5.9	531	6.9	1,080	14.0
7	3,045	173	5.7	204	6.7	392	12.9
8	3,448	210	6.1	258	7.5	492	14.3
9	1,695	101	6.0	117	6.9	206	12.2
10	29,511	1,829	6.2	2,447	8.3	3,482	11.8
11	3,428	181	5.3	246	7.2	473	13.8
12	4,495	243	5.4	312	6.9	677	15.1
13	4,007	205	5.1	243	6.1	532	13.3
14	900	45	5.0	52	5.8	138	15.3
15	1,493	87	5.8	118	7.9	209	14.0
16	1,739	92	5.3	125	7.2	239	13.7
17	1,540	91	5.9	119	7.7	232	15.1
Unknown	4	2		2		1	
Alberta	**111,963**	**6,829**	**6.1**	**8,424**	**7.5**	**13,576**	**12.1**
Facility							
1	6,415	326	5.0	388	6.3	819	12.8
2	3,466	156	6.2	193	6.6	439	12.7
3	1,628	38	8.5	30	3.1	177	10.9
4	36,633	2,653	6.5	3,098	8.4	3,875	10.6
5	824	14	12.6	21	2.6	105	12.7
6	7,376	341	6.7	405	5.3	1,036	14.0
7	2,388	45	6.2	46	2.7	339	14.2
8	1,282	34	15.6	41	4.3	163	12.7
9	1,770	52	5.7	60	3.3	237	13.4
10	36,411	2,764	5.2	3,632	9.9	4,377	12.0
11	1,638	31	10.7	40	2.4	232	14.2
12	3,170	72	7.1	88	2.1	490	15.5
13	3,882	138	6.0	174	4.1	547	14.1
14	990	22	3.5	28	2.3	151	15.3
15	1,101	26	8.7	28	1.8	153	13.9
16	1,693	73	3.9	96	5.5	238	14.1
17	1,296	44	7.2	56	5.3	198	15.3
Alberta	**111,963**	**6,829**	**6.1**	**8,424**	**7.5**	**13,576**	**12.1**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A22 Low Birth Weight (<2500 grams) Live Births and Low Birth Weight Live Birth Rate by Age Group of Mother, Alberta, 1985 - 1999

Year	Total	Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Low Birth Weight Live Births								
85	**2,354**	203	700	871	455	110	15	0
86	**2,377**	219	627	862	530	124	15	0
87	**2,277**	184	601	813	507	157	15	0
88	**2,413**	202	587	858	562	179	25	0
89	**2,528**	234	552	932	590	191	29	0
90	**2,513**	216	566	851	655	200	25	0
91	**2,440**	236	525	789	657	206	27	0
92	**2,434**	195	543	815	642	212	27	0
93	**2,263**	214	499	694	597	232	27	0
94	**2,227**	203	461	669	611	251	32	0
95	**2,310**	194	501	687	596	296	36	0
96	**2,281**	200	494	625	630	293	39	0
97	**2,253**	197	426	671	587	311	61	0
98	**2,331**	206	449	648	623	342	58	5
99	**2,245**	152	452	614	651	318	57	1
Low Birth Weight Rate (per 100 Live Births)								
85	**5.4**	6.5	5.8	5.1	5.2	5.2	5.8	
86	**5.5**	6.9	5.5	5.1	5.6	5.5	6.8	
87	**5.5**	6.0	5.8	5.1	5.3	6.5	5.6	
88	**5.8**	6.7	6.0	5.4	5.6	6.8	7.2	
89	**5.9**	7.4	5.7	5.8	5.4	6.5	8.9	
90	**5.9**	6.6	6.1	5.5	6.0	6.2	6.9	
91	**5.8**	6.9	5.7	5.3	6.0	5.9	6.6	
92	**5.8**	5.9	6.1	5.8	5.6	6.0	6.4	
93	**5.7**	7.1	5.8	5.2	5.5	6.4	6.1	
94	**5.6**	6.7	5.6	5.2	5.6	6.6	6.5	
95	**6.0**	6.4	6.2	5.6	5.5	7.6	7.5	
96	**6.1**	7.4	6.5	5.3	5.9	7.0	6.7	
97	**6.2**	7.7	5.8	5.7	5.9	7.4	9.1	
98	**6.2**	7.9	5.8	5.5	5.9	7.9	8.7	
99	**5.9**	5.8	5.7	5.3	6.3	6.9	7.4	

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A23 Singleton Birth Small or Large for Gestational Age, High Birth Weight, and Mean Birth Weight, Alberta, 1985 - 1999

Year	Total Live Births	Live Singleton Births	Small for Gestational Age Live Singleton Births (SGA)	SGA rate (per 100 Live Singleton Births)	Large for Gestational Age Births (LGA)	LGA rate (per 100 Live Singleton Births)	High Birth Weight Birth (HBW; ≥4,000 grams)	HBW rate (per 100 total live births)	Mean Birth Weight for Live Singleton Term Birth (grams)	Mean Birth Weight for Low Birth Weight Live Birth (grams)
85	43,327	42,478	4,710	11.1	4,121	9.7	4,691	10.8	3,435	2,007
86	43,323	42,512	4,563	10.7	4,170	9.8	4,813	11.1	3,437	2,022
87	41,722	40,855	4,286	10.5	4,014	9.8	4,541	10.9	3,438	1,999
88	41,683	40,863	4,227	10.3	4,049	9.9	4,442	10.7	3,436	2,001
89	42,985	42,069	4,385	10.4	4,093	9.7	4,703	10.9	3,440	2,010
90	42,634	41,765	4,270	10.2	4,216	10.1	4,745	11.1	3,442	1,995
91	42,371	41,493	4,204	10.1	4,118	9.9	4,656	11.0	3,441	2,017
92	41,673	40,724	3,907	9.6	4,426	10.9	4,766	11.4	3,450	2,008
93	39,906	39,043	3,753	9.6	4,037	10.3	4,605	11.5	3,455	2,027
94	39,459	38,589	3,598	9.3	4,018	10.4	4,493	11.4	3,458	1,986
95	38,529	37,630	3,661	9.7	3,946	10.5	4,372	11.3	3,450	1,983
96	37,476	36,589	3,298	9.0	4,086	11.2	4,364	11.6	3,461	1,989
97	36,551	35,621	3,296	9.3	3,828	10.7	4,174	11.4	3,460	1,991
98	37,615	36,610	3,259	8.9	4,270	11.7	4,636	12.3	3,471	1,992
99	37,797	36,768	2,975	8.1	4,367	11.9	4,766	12.6	3,486	1,973

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A24 Small for Gestational Age (SGA) and Large for Gestational Age (LGA) Rates by Residence RHA, Alberta, 1997 - 1999 combined

Residence RHA	Live Births	SGA		LGA	
		Cases	Rate	Cases	Rate
Residence					
1	6,211	459	7.4	775	12.5
2	3,566	351	9.8	367	10.3
3	2,586	238	9.2	249	9.6
4	33,408	3,299	9.9	3,174	9.5
5	1,849	160	8.7	216	11.7
6	7,490	605	8.1	953	12.7
7	2,952	222	7.5	358	12.1
8	3,331	247	7.4	466	14.0
9	1,645	146	8.9	192	11.7
10	28,749	2,449	8.5	3,390	11.8
11	3,351	249	7.4	461	13.8
12	4,398	324	7.4	641	14.6
13	3,912	292	7.5	443	11.3
14	893	76	8.5	121	13.5
15	1,454	131	9.0	197	13.5
16	1,691	125	7.4	235	13.9
17	1,509	157	10.4	226	15.0
Unknown	4			1	
Alberta	108,999	9,530	8.7	12,464	11.4

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A25 High Birth Weight (≥4,000 grams) Rate by Residence and Facility RHA, Alberta, 1985 - 1999

RHA	Year														
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Residence															
1	279	304	288	218	277	274	257	291	293	285	253	267	240	290	284
2	165	147	153	150	155	146	129	140	133	124	174	151	156	142	147
3	97	75	79	83	79	91	74	105	81	97	94	81	79	96	99
4	1,117	1,122	1,149	1,132	1,200	1,215	1,207	1,172	1,097	1,143	1,144	1,107	1,104	1,233	1,293
5	76	101	85	84	80	102	83	99	84	88	91	91	79	88	93
6	339	354	314	328	344	318	354	347	390	331	311	317	334	379	367
7	205	198	163	191	157	155	151	154	147	146	128	130	126	144	122
8	156	155	137	126	150	137	141	169	139	128	171	166	150	172	170
9	76	88	99	80	101	100	81	114	76	78	73	70	53	64	89
10	1,241	1,392	1,203	1,269	1,370	1,356	1,346	1,279	1,284	1,199	1,152	1,103	1,085	1,179	1,218
11	194	174	170	163	135	177	174	167	176	178	153	165	129	166	178
12	252	214	229	220	207	241	213	246	253	220	186	241	211	241	225
13	202	185	179	165	172	152	164	180	188	186	180	194	159	184	189
14	57	46	56	34	42	45	50	45	33	50	40	47	46	46	46
15	58	54	67	62	67	75	79	73	77	77	62	66	63	64	82
16	121	141	96	91	109	97	91	105	86	90	81	98	75	89	75
17	56	63	74	46	58	64	62	80	68	73	79	70	85	58	89
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Alberta	**4,691**	**4,813**	**4,541**	**4,442**	**4,703**	**4,745**	**4,656**	**4,766**	**4,605**	**4,493**	**4,372**	**4,364**	**4,174**	**4,636**	**4,766**
Facility															
1	266	292	284	224	276	266	247	288	291	285	259	260	241	296	282
2	161	150	149	139	150	145	128	133	129	123	168	147	149	140	150
3	65	50	48	42	35	56	43	58	48	51	59	51	49	65	63
4	1,193	1,204	1,224	1,210	1,291	1,305	1,284	1,265	1,171	1,231	1,231	1,190	1,188	1,303	1,384
5	52	47	46	46	35	52	49	46	39	42	47	51	35	38	32
6	316	336	311	317	337	312	345	355	377	324	293	298	309	368	359
7	181	189	146	175	143	132	135	131	135	134	115	109	115	118	106
8	70	82	71	59	72	56	66	64	58	49	50	43	60	49	54
9	83	101	93	66	82	92	68	94	76	81	85	72	68	76	93
10	1,572	1,642	1,434	1,531	1,636	1,646	1,628	1,605	1,597	1,486	1,443	1,407	1,337	1,496	1,544
11	111	97	102	97	83	100	90	71	84	86	59	87	69	85	78
12	150	156	178	169	150	175	154	190	173	152	141	186	141	180	169
13	191	166	166	159	158	148	162	184	188	192	187	189	168	194	185
14	65	56	68	39	55	55	65	48	47	61	42	56	54	48	49
15	47	50	60	45	40	58	53	65	51	46	50	56	44	48	61
16	120	141	95	82	105	96	89	105	86	91	77	96	75	87	76
17	48	54	66	42	55	51	50	64	55	59	66	66	72	45	81
Alberta	**4,691**	**4,813**	**4,541**	**4,442**	**4,703**	**4,745**	**4,656**	**4,766**	**4,605**	**4,493**	**4,372**	**4,364**	**4,174**	**4,636**	**4,766**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998.

Data include Alberta residents only.

Table A26 High birth weight (≥4,000 grams) by Maternal Age Group, Alberta, 1985 - 1999

Year	**Total**	**Age Group (Years)**						
		<20	**20-24**	**25-29**	**30-34**	**35-39**	**>39**	**Unknown**
High Birth Weight Live Births								
85	**4,691**	287	1159	1853	1093	261	38	0
86	**4,813**	277	1143	1862	1195	302	34	0
87	**4,541**	287	1009	1778	1116	311	40	0
88	**4,442**	258	967	1687	1160	329	41	0
89	**4,703**	298	917	1771	1315	369	33	0
90	**4,745**	302	959	1694	1330	401	59	0
91	**4,656**	347	940	1581	1290	440	58	0
92	**4,766**	340	945	1612	1353	459	57	0
93	**4,605**	315	919	1504	1365	439	63	0
94	**4,493**	310	844	1480	1342	462	55	0
95	**4,372**	280	807	1448	1305	472	60	0
96	**4,364**	255	821	1401	1306	503	78	0
97	**4,174**	251	764	1353	1224	507	75	0
98	**4,636**	276	819	1517	1374	554	92	4
99	**4,766**	237	925	1531	1364	599	110	0
High Birth Weight Rate (per 100 Live Births)								
85	**10.8**	9.2	9.6	10.9	12.5	12.4	14.6	
86	**11.1**	8.8	10.0	11.1	12.6	13.3	15.5	
87	**10.9**	9.4	9.8	11.1	11.6	12.9	15.0	
88	**10.7**	8.5	9.9	10.6	11.6	12.6	11.8	
89	**10.9**	9.4	9.5	11.0	12.1	12.6	10.1	
90	**11.1**	9.2	10.3	10.9	12.2	12.4	16.3	
91	**11.0**	10.1	10.1	10.7	11.7	12.7	14.3	
92	**11.4**	10.4	10.6	11.4	11.9	12.9	13.4	
93	**11.5**	10.4	10.6	11.4	12.5	12.1	14.2	
94	**11.4**	10.2	10.3	11.5	12.2	12.1	11.2	
95	**11.3**	9.3	10.0	11.8	12.1	12.1	12.5	
96	**11.6**	9.4	10.9	11.8	12.3	12.1	13.4	
97	**11.4**	9.8	10.4	11.6	12.2	12.0	11.1	
98	**12.3**	10.5	10.6	12.9	13.1	12.7	13.8	
99	**12.6**	9.1	11.8	13.1	13.3	13.0	14.2	

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Note: Data include Alberta residents only.

Table A27 Pre-term (<37 Weeks Gestation) Births by LBW/not LBW and Singleton/Multiple, Alberta, 1985 - 1999

Year	Pre-term Cases	<2500 Grams						≥2,500 grams					
		Singleton		Multiple		Total		Singleton		Multiple		Total	
	Total	Cases	% of Pre-term Births	Cases	% of Pre-term Births	Cases	% of Pre-term Births	Cases	% of Pre-term Births	Cases	% of Pre-term Births	Cases	% of Pre-term Births
85	**2,831**	1,195	42.2	293	10.3	1,488	52.6	1,248	44.1	95	3.4	1,343	47.4
86	**2,741**	1,174	43.6	297	10.8	1,471	53.7	1,183	43.2	86	3.1	1,269	46.3
87	**2,666**	1,152	44.0	295	11.1	1,447	54.3	1,136	42.6	83	3.1	1,219	45.7
88	**2,857**	1,224	40.3	340	11.9	1,564	54.7	1,186	41.5	107	3.7	1,293	45.3
89	**2,830**	1,258	43.3	329	11.6	1,587	56.1	1,145	40.5	98	3.5	1,243	43.9
90	**2,956**	1,243	42.6	372	12.6	1,615	54.6	1,250	42.3	90	3.0	1,340	45.3
91	**2,812**	1,192	44.2	326	11.6	1,518	54.0	1,200	42.7	94	3.3	1,294	46.0
92	**2,819**	1,179	42.3	368	13.1	1,547	54.9	1,186	42.1	86	3.1	1,272	45.1
93	**2,647**	1,132	44.5	296	11.2	1,428	53.9	1,132	42.8	87	3.3	1,219	46.1
94	**2,674**	1,146	42.3	317	11.9	1,463	54.7	1,108	41.4	103	3.9	1,211	45.3
95	**2,707**	1,163	42.3	395	14.6	1,558	57.6	1,049	38.8	100	3.7	1,149	42.4
96	**2,769**	1,145	42.0	392	14.2	1,537	55.5	1,113	40.2	119	4.3	1,232	44.5
97	**2,655**	1,104	43.1	420	15.8	1,524	57.4	1,041	39.2	90	3.4	1,131	42.6
98	**2,824**	1,144	39.1	438	15.5	1,582	56.0	1,142	40.4	98	3.5	1,240	43.9
99	**2,940**	1,192	40.5	415	14.1	1,607	54.7	1,205	41.0	128	4.4	1,333	45.3

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A28 Live Singleton and Multiple Pre-term Birth Rates, Alberta, 1985 - 1999

Year	Total Live Singleton Births	Live Singleton Pre-term Births	Singleton Pre-term Birth Rate	Total live multiple births	Live Multiple Pre-term Births	Multiple Pre-term Birth Rate
85	42,478	2,443	5.8	849	388	45.7
86	42,512	2,358	5.5	811	383	47.2
87	40,855	2,288	5.6	863	378	43.8
88	40,863	2,410	5.9	820	447	54.5
89	42,069	2,403	5.7	916	427	46.6
90	41,765	2,493	6.0	868	462	53.2
91	41,493	2,392	5.8	878	420	47.8
92	40,724	2,365	5.8	948	454	47.9
93	39,043	2,264	5.8	860	383	44.5
94	38,589	2,254	5.8	870	420	48.3
95	37,630	2,212	5.9	899	495	55.1
96	36,589	2,258	6.2	887	511	57.6
97	35,621	2,145	6.0	930	510	54.8
98	36,610	2,291	6.3	1005	536	53.3
99	36,768	2,397	6.5	1029	543	52.8

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Table A29 Pre-term (<37 weeks gestation) Live Births by Residence and Facility RHA, Alberta, 1985 - 1999

RHA	Year														
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Residence															
1	168	162	170	158	169	208	174	134	178	160	152	150	144	132	144
2	97	81	82	79	70	91	68	63	59	68	72	65	67	98	77
3	48	39	47	59	43	61	66	48	57	61	49	47	64	57	61
4	787	784	744	804	805	913	789	785	759	777	823	830	823	905	950
5	43	23	57	55	31	45	43	40	36	44	44	40	37	44	43
6	165	177	164	159	195	186	168	187	193	162	184	212	166	173	192
7	76	73	86	87	104	65	95	66	75	74	90	71	65	70	69
8	70	76	61	79	84	68	72	92	55	85	82	64	84	82	92
9	46	45	27	46	45	40	55	40	29	41	51	35	47	36	34
10	897	894	874	891	871	886	905	951	826	817	772	837	768	837	842
11	80	80	76	93	93	84	91	90	66	90	66	86	76	78	91
12	131	109	100	129	113	114	107	109	100	92	102	104	105	87	120
13	84	76	55	81	80	76	59	84	68	67	82	82	72	79	92
14	25	19	22	25	18	12	25	21	21	16	25	24	19	18	15
15	37	27	25	24	36	41	37	44	39	49	46	48	35	48	35
16	49	43	47	52	39	37	30	35	44	39	37	39	44	39	42
17	27	33	29	36	34	29	28	30	42	32	30	35	38	40	41
Unknown	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Alberta	**2,831**	**2,741**	**2,666**	**2,857**	**2,830**	**2,956**	**2,812**	**2,819**	**2,647**	**2,674**	**2,707**	**2,769**	**2,655**	**2,824**	**2,940**
Facility															
1	154	154	160	145	164	205	163	116	156	153	143	139	124	134	130
2	80	73	62	67	49	64	49	51	47	52	61	51	58	77	56
3	18	9	13	12	17	15	9	4	16	10	9	7	4	18	8
4	906	864	862	920	888	1,042	922	901	888	890	945	942	965	1,026	1105
5	16	5	22	12	6	15	13	7	7	12	6	8	7	7	7
6	106	129	116	140	154	131	139	146	139	134	137	171	126	129	150
7	36	28	42	36	34	26	46	20	21	34	25	24	13	22	11
8	17	20	16	20	12	11	12	15	9	20	12	9	11	18	12
9	17	22	13	17	12	16	35	19	9	15	23	17	21	19	20
10	1,256	1,267	1,182	1,285	1,326	1,253	1,236	1,345	1,190	1,173	1,123	1,202	1,164	1,216	1252
11	23	19	12	24	29	21	30	22	19	19	17	12	12	13	14
12	60	36	40	45	35	44	40	38	28	38	47	35	27	23	38
13	47	40	26	44	24	45	39	52	35	40	75	72	55	53	66
14	19	12	22	24	19	9	16	16	18	12	15	15	10	8	10
15	24	10	18	5	12	18	24	24	13	23	19	17	10	7	11
16	35	35	43	43	31	26	26	26	35	33	34	28	31	32	33
17	17	18	17	18	18	15	13	17	17	16	16	20	17	22	17
Alberta	**2,831**	**2,741**	**2,666**	**2,857**	**2,830**	**2,956**	**2,812**	**2,819**	**2,647**	**2,674**	**2,707**	**2,769**	**2,655**	**2,824**	**2,940**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998.

Data include Alberta residents only.

Table A30 Pre-term (<37 weeks gestation) Live Births and Pre-term Live Birth Rate by Age Group of Mother, Alberta, 1985 - 1999

Year	Total	Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Live Births								
85	2,831	266	816	1,030	551	145	23	0
86	2,741	262	707	988	592	171	21	0
87	2,666	203	669	955	630	178	31	0
88	2,857	245	684	1,036	645	219	28	0
89	2,830	268	632	998	691	204	37	0
90	2,956	253	652	1,006	774	245	26	0
91	2,812	280	611	901	723	258	39	0
92	2,819	242	598	905	767	267	39	1
93	2,647	242	573	795	702	298	37	0
94	2,674	236	551	820	721	310	36	0
95	2,707	243	564	802	720	337	41	0
96	2,769	222	543	815	780	359	50	0
97	2,655	221	503	797	703	358	73	0
98	2,824	241	545	801	757	413	62	5
99	2,940	193	615	832	822	400	77	1
Pre-term Birth Rate (per 100 Live Births)								
85	6.5	8.5	6.7	6.1	6.3	6.9	8.8	
86	6.3	8.3	6.2	5.9	6.2	7.5	9.5	
87	6.4	6.6	6.5	5.9	6.6	7.4	11.7	
88	6.9	8.1	7.0	6.5	6.5	8.4	8.1	
89	6.6	8.5	6.5	6.2	6.4	7.0	11.3	
90	6.9	7.7	7.0	6.5	7.1	7.6	7.2	
91	6.6	8.2	6.6	6.1	6.6	7.4	9.6	
92	6.8	7.4	6.7	6.4	6.7	7.5	9.2	
93	6.6	8.0	6.6	6.0	6.4	8.2	8.3	
94	6.8	7.8	6.7	6.3	6.6	8.1	7.3	
95	7.0	8.1	7.0	6.6	6.7	8.6	8.5	
96	7.4	8.2	7.2	6.9	7.4	8.6	8.6	
97	7.3	8.6	6.8	6.8	7.0	8.5	10.8	
98	7.5	9.2	7.0	6.8	7.2	9.5	9.3	
99	7.8	7.4	7.8	7.1	8.0	8.7	10.0	

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998

Data include Alberta residents only.

Table A31 Multiple Pregnancies, Multiple Births and Perinatal Deaths of Multiple Births by Facility RHAs and Hospitals, Alberta, 1998

Place of Birth	Total Mothers Delivered	Multiple Pregnancy Rate[1]	Multiple Pregnancies			Babies			Perinatal Deaths for Multiple Births	
			Twins	Triplets	Other	Twins	Triplets	Other	Cases[2]	Rate[3]
RHA Hospitals										
1	2,079	0.9	19	0	0	38	0	0	0	0
2	1,242	1.0	12	0	0	24	0	0	2	83.3
3	562	0.0	0	0	0	0	0	0	0	-
4	12,078	1.7	188	11	1	374	33	4	11	26.8
5	366	0.0	0	0	0	0	0	0	0	-
6	2,300	1.3	29	0	0	58	0	0	0	0.0
7	837	0.1	1	0	0	2	0	0	0	0.0
8	433	1.2	5	0	0	10	0	0	0	0.0
9	575	0.5	3	0	0	6	0	0	0	0.0
10	12,028	1.8	209	5	1	417	14	4	14	32.2
11	535	0.2	1	0	0	2	0	0	0	0.0
12	1,124	0.1	1	0	0	2	0	0	0	0.0
13	1,285	1.3	17	0	0	34	0	0	0	0.0
14	342	0.0	0	0	0	0	0	0	0	-
15	393	0.3	1	0	0	2	0	0	0	0.0
16	639	1.1	7	0	0	14	0	0	1	71.4
17	411	0.5	2	0	0	4	0	0	2	500.0
Out-of-Hospital*	379	0.0	0	0	0	0	0	0	0	-
Alberta	**37,608**	**1.4**	**495**	**16**	**2**	**987**	**47**	**8**	**30**	**28.8**

Sources: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

* Out-of-Hospital data from Health Surveillance, Alberta Health and Wellness.

Notes:

1. Multiple Pregnancy Rate = Total Multiple Pregnancies/ Total Mothers Delivered x 100
2. Excludes fetal death of one or more multiples prior to 20 weeks gestation.
3. Perinatal Death Rate (Multiple Births) = (Number of Perinatal Deaths (Multiple Births) / Total Number of Multiple Births) x 1000.

Table A32 Multiple Pregnancies, Multiple Births and Perinatal Deaths of Multiple Births, Alberta, 1982 - 1998

Year	Total Mothers Delivered	Multiple Pregnancies (MP)				Multiple Births (MB)			Perinatal Deaths of Multiple Births[1]	
		Twins	Triplets	Quads	MP Rate	Total Births	Total MB[2]	MB Rate	Cases	Rate
82	44,601	432	11	2	1.0	45,300	905	2.0	52	57.4
83	45,023	419	5	0	0.9	45,770	853	1.9	41	48.1
84	43,546	416	3	0	1.0	44,235	841	1.9	49	58.3
85	43,425	429	5	0	1.0	43,945	873	2.0	40	45.8
86	43,495	407	7	0	1.0	43,853	835	1.9	49	58.7
87	41,861	448	4	0	1.1	42,356	908	2.1	48	52.9
88	42,040	401	6	2	1.0	42,459	828	2.0	53	64.0
89	42,819	463	7	0	1.1	43,293	947	2.2	49	51.7
90	42,949	446	9	0	1.1	43,398	919	2.1	66	71.8
91	42,581	464	6	0	1.1	43,092	946	2.2	46	48.6
92	41,693	474	16	0	1.2	42,203	996	2.4	52	52.2
93	40,075	442	11	1	1.1	40,531	921	2.3	48	52.1
94	39,723	456	8	0	1.2	40,190	936	2.3	44	47.0
95	38,359	459	10	0	1.2	38,837	948	2.4	56	59.0
96	37,524	456	10	0	1.2	37,911	942	2.5	47	50.5
97	36,514	464	28	0	1.3	36,885	1,012	2.7	44[3]	45.9
98	37,608	495	16	2	1.4	37,936	1,046	2.8	30	28.7

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Perinatal Death Rate of Multiple Births = Perinatal Deaths of Multiple Births /Total Number of Mutiple Births x 1000.
2. Total MB includes births in which there was a fetal death of another fetus prior to 20 weeks gestation.
3. This is a correction of the December 2000 Pregnancy Outcomes report, in which 46 perinatal deaths were reported for multiple births in 1997.

Table A33 Twin, Triplet and Quadruplet Live Births and Percent of Multiple Births, Alberta, 1985 - 1999

Year	Total	Twins	Triplets	Quadruplets	%Twins	%Triplets	%Quadruplets
85	**849**	837	12	0	98.6	1.4	0.0
86	**811**	791	20	0	97.5	2.5	0.0
87	**863**	850	13	0	98.5	1.5	0.0
88	**820**	794	18	8	96.8	2.2	1.0
89	**916**	897	19	0	97.9	2.1	0.0
90	**868**	841	27	0	96.9	3.1	0.0
91	**878**	867	11	0	98.7	1.3	0.0
92	**948**	909	39	0	95.9	4.1	0.0
93	**860**	833	23	4	96.9	2.7	0.5
94	**870**	849	21	0	97.6	2.4	0.0
95	**899**	874	25	0	97.2	2.8	0.0
96	**887**	861	26	0	97.1	2.9	0.0
97	**930**	873	57	0	93.9	6.1	0.0
98	**1,005**	968	34	3	96.3	3.4	0.3
99	**1,029**	997	32	0	96.9	3.1	0.0

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Note: Data include Alberta residents only.

Table A34 Multiple Live Births by Residence and Facility RHA, Alberta, 1985 - 1999

RHA	Total	Year														
		85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Residence																
1	752	38	53	44	54	46	69	44	38	52	57	55	50	55	34	63
2	354	16	20	17	34	22	18	23	22	25	18	29	23	25	26	36
3	292	22	16	16	12	16	10	24	28	20	22	16	16	35	16	23
4	4,121	238	216	266	230	284	286	265	274	258	236	271	304	296	357	340
5	215	13	12	20	15	11	16	24	10	6	24	13	12	16	13	10
6	1,027	66	60	68	59	74	69	62	88	67	61	70	80	58	79	66
7	420	22	27	27	23	44	22	32	18	30	30	36	16	32	9	52
8	447	16	22	21	34	22	20	30	42	30	49	25	19	34	44	39
9	240	8	8	26	12	14	16	21	23	11	15	24	12	15	22	13
10	3,738	268	268	254	215	256	227	239	275	243	259	237	235	246	268	248
11	377	34	20	28	22	31	12	21	29	28	27	16	32	22	27	28
12	482	42	37	27	45	27	33	21	33	35	14	41	30	38	26	33
13	392	18	16	12	31	29	28	40	32	18	33	26	14	13	37	45
14	98	6	8	8	6	8	4	10	12	6	2	8	13	4	3	0
15	149	6	8	18	10	8	4	4	9	12	8	10	13	6	19	14
16	194	19	12	8	12	10	25	8	9	15	8	10	10	22	15	11
17	135	17	8	3	6	14	9	10	6	4	7	12	8	13	10	8
Alberta	**13,433**	**849**	**811**	**863**	**820**	**916**	**868**	**878**	**948**	**860**	**870**	**899**	**887**	**930**	**1,005**	**1,029**
Facility																
1	730	38	55	44	47	50	67	42	38	43	55	50	48	53	38	62
2	300	12	12	8	34	18	19	21	20	23	16	28	15	23	21	30
3	18	4	0	2	0	2	1	2	3	0	2	0	0	0	0	2
4	4,749	276	248	305	266	312	320	315	313	304	279	317	348	351	399	396
5	57	7	4	10	0	4	4	6	2	2	6	2	6	4	0	0
6	819	54	48	54	51	52	45	56	69	49	58	50	64	48	65	56
7	134	10	7	18	8	16	8	18	4	12	13	6	2	2	2	8
8	72	0	0	8	2	4	6	8	6	12	8	0	0	2	10	6
9	90	6	6	8	2	2	5	5	14	4	0	12	2	6	6	12
10	5,662	384	375	351	361	401	336	351	424	362	376	378	368	389	408	398
11	59	6	8	6	2	11	0	2	2	4	8	0	2	2	2	4
12	107	13	10	10	12	6	9	2	11	6	4	8	2	6	2	6
13	335	16	8	6	21	20	24	34	22	14	33	30	16	23	32	36
14	72	2	10	10	6	4	4	10	8	8	2	2	2	4	0	0
15	32	4	2	14	0	0	0	2	2	2	0	0	2	0	2	2
16	151	10	12	8	8	8	18	4	6	13	8	10	6	15	14	11
17	46	7	6	1	0	6	2	0	4	2	2	6	4	2	4	0
Alberta	**13,433**	**849**	**811**	**863**	**820**	**916**	**868**	**878**	**948**	**860**	**870**	**899**	**887**	**930**	**1,005**	**1,029**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A35 Multiple Birth Rate (per 100 Live Births) for Residence and Facility RHA, Alberta, 1997 - 1999 Combined

RHA	Residence			Facility	
	Total	Live Births	Rate	Total	Live Births
1	152	6,363	2.4	153	6,415
2	87	3,653	2.4	74	3,466
3	74	2,660	2.8	2	1,628
4	993	34,401	2.9	1,146	36,633
5	39	1,888	2.1	4	824
6	203	7,693	2.6	169	7,376
7	93	3,045	3.1	12	2,388
8	117	3,448	3.4	18	1,282
9	50	1,695	2.9	24	1,770
10	762	29,511	2.6	1,195	36,411
11	77	3,428	2.2	8	1,638
12	97	4,495	2.2	14	3,170
13	95	4,007	2.4	91	3,882
14	7	900	0.8	4	990
15	39	1,493	2.6	4	1,101
16	48	1,739	2.8	40	1,693
17	31	1,540	2.0	6	1,296
Alberta	2,964	**111,963**	**2.6**	2,964	**111,963**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A36 Live Multiple Births and Live Multiple Birth Rate by Age Group of Mother, Alberta, 1985 - 1999

Year	Total	Age Group (Years)						
		<20	20-24	25-29	30-34	35-39	>39	Unknown
Live Multiple Births[1]								
85	**849**	29	195	365	210	46	4	0
86	**811**	44	194	316	204	51	2	0
87	**863**	39	185	318	252	65	4	0
88	**820**	34	154	315	240	69	8	0
89	**916**	48	137	349	278	95	9	0
90	**868**	29	146	314	299	74	6	0
91	**878**	37	148	338	263	84	8	0
92	**948**	36	168	343	308	86	7	0
93	**860**	29	188	287	248	98	10	0
94	**870**	36	137	293	295	106	3	0
95	**899**	37	167	281	277	131	6	0
96	**887**	44	150	271	289	119	14	0
97	**930**	26	133	266	310	171	24	0
98	**1,005**	28	129	293	359	166	28	2
99	**1,029**	27	139	277	384	174	28	0
Live Multiple Birth Rate (per 100 Live Births)								
85	**2.0**	0.9	1.6	2.2	2.4	2.2		
86	**1.9**	1.4	1.7	1.9	2.2	2.2		
87	**2.1**	1.3	1.8	2.0	2.6	2.7		
88	**2.0**	1.1	1.6	2.0	2.4	2.6		
89	**2.1**	1.5	1.4	2.2	2.6	3.2		
90	**2.0**	0.9	1.6	2.0	2.7	2.3		
91	**2.1**	1.1	1.6	2.3	2.4	2.4		
92	**2.3**	1.1	1.9	2.4	2.7	2.4		
93	**2.2**	1.0	2.2	2.2	2.3	2.7		
94	**2.2**	1.2	1.7	2.3	2.7	2.8		
95	**2.3**	1.2	2.1	2.3	2.6	3.3		
96	**2.4**	1.6	2.0	2.3	2.7	2.9		
97	**2.5**	1.0	1.8	2.3	3.1	4.0	3.6	
98	**2.7**	1.1	1.7	2.5	3.4	3.8	4.2	
99	**2.7**	1.0	1.8	2.4	3.7	3.8	3.6	

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.

Notes: 1. Multiple birth refers to birth in which more than one infant is born.
Data include Alberta residents only.

Table A37 Stillbirth Rate, Low Birth Weight Rate and Pre-term Birth Weight of Multiple Births, Alberta, 1985 - 1999

Year	Live Multiple Births[1]	Stillbirths		Low Birth Weight Births[2]		Pre-term Births[3]	
	Cases	Cases	%	Cases	%	Cases	%
85	849	16	1.9	415	48.9	388	45.7
86	811	19	2.3	408	50.3	383	47.2
87	863	21	2.4	396	45.9	377	43.7
88	820	30	3.7	427	52.1	447	54.5
89	916	16	1.7	476	52.0	427	46.6
90	868	26	3.0	457	52.6	462	53.2
91	878	24	2.7	445	50.7	420	47.8
92	948	19	2.0	488	51.5	454	47.9
93	860	27	3.1	397	46.2	382	44.4
94	870	16	1.8	431	49.5	420	48.3
95	899	25	2.8	479	53.3	495	55.1
96	887	20	2.3	485	54.7	511	57.6
97	930	19	2.0	513	55.2	510	54.8
98	1,005	12	1.2	537	53.4	536	53.3
99	1,029	24	2.3	510	49.6	543	52.8

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Stillbirth File, Department of Government Services, December 2000 release.

Notes: 1. Multiple birth refers to birth in which more than one infant is born.
2. Low birth weight refers to birth weight less than 2,500 grams.
3. Pre-term refers to a period of gestation less than 37 full weeks.
Data include Alberta residents only.

Table A38 Prevalence of Smoking, Alcohol Consumption and Street Drug Use During Pregnancy, Alberta, 1997 - 1999

Year	Smoking During Pregnancy						Alcohol Consumption During Pregnancy				Street Drug Use During Pregnancy			
	No		Yes		Quit		No		Yes		No		Yes	
	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
97	25,812	73.3	8,417	23.9	977	2.8	33,005	94.8	1,815	5.2	34,160	98.5	506	1.5
98	26,339	73.2	8,477	23.6	1,154	3.2	33,957	95.6	1,556	4.4	34,758	98.4	578	1.6
99	27,052	74.3	8,370	23.0	997	2.7	34,438	95.7	1,531	4.3	35,110	98.5	539	1.5
Total	**79,203**	**73.6**	**25,264**	**23.5**	**3,128**	**2.9**	**101,400**	**95.4**	**4,902**	**4.6**	**104,028**	**98.5**	**1,623**	**1.5**

Source: Vital Statistics, Birth File, Department of Government Services, January 2001 release.

Notes: Only live births for which information on smoking, alcohol, or street drug use is available are included.
Data include Alberta residents only.

Table A39 Selected Indicators for Live Births, by Risk Factors, Alberta, 1997 - 1999 Combined

Indicator	Smoking During Pregnancy				Alcohol Consumption During Pregnancy		Street Drug Use During Pregnancy	
	No	Yes	Quit	Yes + Quit	No	Yes	No	Yes
Mean Maternal Age (Years)	29.0	26.0	25.4	25.9	28.2	26.9	28.3	23.7
Mean Birth Weight (Grams)	3,424	3,241	3,413	3,260	3,384	3,315	3,385	3,148
Low Birth Weight Rate (per 100 Live Births)	5.4	9.7	6.5	9.3	6.2	9.3	6.2	15.7
Small for Gestational Age Rate (per 100 Live Births)	7.6	16.2	7.9	15.2	9.3	13.3	9.3	18.4
Pre-term Birth Rate (per 100 Live Births)	7.4	9.9	8.7	9.8	7.9	10.6	7.9	17.4

Source: Vital Statistics, Birth File, Department of Government Services, January 2001 release.

Notes: Only live births for which information on smoking, alcohol, or street drug use is available are included. Data include Alberta residents only.

Table A40 Selected Indicators for Live Births, by Prenatal Class Attendance, Alberta, 1997 - 1999 Combined

Indicator	Prenatal Class Attendance	
	No	Yes
Mean Maternal Age (Years)	28.4	27.6
Mean Birth Weight (Grams)	3,368	3,410
Low Birth Weight Rate (per 100 Live Births)	7.3	4.8
Small for Gestational Age Rate (per 100 Live Births)	9.6	9.0
Pre-term Birth Rate (per 100 Live Births)	9.0	6.4

Source: Vital Statistics, Birth File, Department of Government Services, January 2001 release.

Note: Only live births for which information on smoking, alcohol, or street drug use is available are included.

Table A41 Breastfeeding Upon Discharge Rates by Facility RHAs, Alberta, 1996 - 1998

RHA[1]	1996			1997			1998		
	Number of Women Delivering	Number Breastfeeding Upon Discharge	% Breastfeeding on Discharge[2]	Number of Women Delivering	Number Breastfeeding Upon Discharge	% Breastfeeding on Discharge[2]	Number of Women Delivering	Women Breastfeeding Upon Discharge	% Breastfeeding on Discharge[2]
1	1,860	1,556	83.7	2,105	1,805	85.7	2,079	1,790	86.1
2	1,168	935	80.1	1,181	955	80.9	1,242	987	79.5
3	516	473	91.7	516	470	91.1	562	534	95.0
4	11,783	10,171	86.3	11,726	10,244	87.4	12,078	10,688	88.5
5	436	365	83.7	48	36	75.0	366	318	86.9
6	2,372	1,971	83.1	2,150	1,791	83.3	2,300	1,935	84.1
7	843	635	75.3	830	666	80.2	837	719	85.9
8	395	326	82.5	436	362	83.0	433	311	71.8
9	616	485	78.7	581	477	82.1	575	471	81.9
10	7,291	6,095	83.6	7,144	6,015	84.2	7,536	6,403	85.0
11	535	387	72.3	492	387	78.7	515	411	79.8
12	1,120	719	64.2	1,051	828	78.8	1,124	900	80.1
13	1,283	1,068	83.2	1,154	958	83.0	1,223	1,053	86.1
14	360	265	73.6	335	277	82.7	342	218	63.7
15	368	251	68.2	344	246	71.5	393	302	76.8
16	NR[3]	NR[3]	NR[3]	607	308	50.7	639	460	72.0
17	456	387	84.9	448	361	80.6	309	254	82.2
Alberta	**31,402**	**26,089**	**83.1**	**31,148**	**26,186**	**84.1**	**32,553**	**27,754**	**85.3**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes: 1. Hospitals not reporting on breastfeeding have been excluded from the data.

2. Number of women breastfeeding upon discharge / number of women delivering x 100.

3. NR = Not reporting.

RHA boundaries are current as of 1998.

Table A42 Induced Abortions by Age, and Age-Specific Induced Abortion Rates, Alberta, 1985 - 1999

		Age Group (Years)										
Year	**Total**	**< 15**	**15-17**	**18-19**	**15-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**> 44**	**Unknown**
Number of Induced Abortions												
85	**6,499**	57	643	937	1,580	2,244	1,411	760	354	83	10	0
86	**6,237**	38	607	857	1,464	2,199	1,321	759	358	93	5	0
87	**5,465**	44	538	815	1,353	1,788	1,227	663	289	93	8	0
88	**6,203**	33	563	985	1,548	2,015	1,372	760	362	108	5	0
89	**6,502**	54	513	965	1,478	2,077	1,498	855	412	117	11	0
90	**6,559**	44	515	907	1,422	2,131	1,426	952	447	131	6	0
91	**6,803**	47	578	911	1,489	2,155	1,466	1,003	508	128	7	0
92	**8,552**	76	816	1097	1,913	2,692	1,849	1,227	645	141	9	0
93	**8,905**	63	885	1,212	2,097	2,817	1,737	1,290	739	154	8	0
94	**8,983**	59	832	1,276	2,108	2,813	1,794	1,318	708	179	4	0
95	**8,906**	69	817	1,203	2,020	2,773	1,795	1,277	758	207	7	0
96	**9,240**	38	851	1,250	2,101	2,907	1,937	1,220	800	221	15	1
97	**10,313**	47	911	1,390	2,301	3,272	2,081	1,423	903	275	11	0
98	**10,346**	57	955	1,442	2,397	3,263	2,109	1,321	898	280	21	0
99	**10,164**	43	892	1,327	2,219	3,284	2,115	1,336	870	286	11	0
Age-Specific Rate (per 1,000 Women in Each Age Group)^{1,2}												
	15-49	< 15	15-17	18-19	15-19	20-24	25-29	30-34	35-39	40-44	> 44	
85	**9.9**	0.7	12.0	25.1	17.4	19.0	11.0	7.0	3.9	1.3	0.2	
86	**9.2**	0.4	11.0	22.5	15.7	18.6	10.0	6.6	3.7	1.3	0.1	
87	**8.0**	0.5	9.9	21.6	14.7	16.0	9.4	5.6	3.0	1.2	0.1	
88	**9.0**	0.4	10.6	25.6	16.9	18.9	10.7	6.3	3.7	1.3	0.1	
89	**9.4**	0.6	9.8	25.1	16.3	20.3	11.8	6.9	4.0	1.4	0.2	
90	**9.3**	0.5	9.8	24.2	15.8	21.0	11.4	7.5	4.1	1.5	0.1	
91	**9.5**	0.5	10.9	24.9	16.6	21.4	12.1	7.8	4.5	1.4	0.1	
92	**11.8**	0.8	15.0	30.4	21.2	27.2	15.9	9.4	5.5	1.5	0.1	
93	**12.2**	0.6	16.2	33.5	23.1	28.8	15.6	9.8	6.1	1.6	0.1	
94	**12.2**	0.6	15.0	35.0	22.9	29.5	16.9	10.2	5.7	1.7	0.0	
95	**12.1**	0.7	14.5	32.4	21.6	29.6	17.5	10.1	6.0	1.9	0.1	
96	**12.4**	0.4	14.6	33.4	22.0	31.3	19.1	10.1	6.2	2.0	0.2	
97	**13.6**	0.4	15.2	36.4	23.4	34.4	20.5	12.1	6.9	2.3	0.1	
98	**13.4**	0.5	15.3	36.4	23.5	33.2	20.3	11.5	6.8	2.3	0.2	
99	**12.8**	0.4	13.8	32.4	21.0	32.2	20.0	11.9	6.5	2.2	0.1	

Sources: Clinics Files, Alberta Health and Wellness.
Alberta Health Care Insurance Plan Registration File, Alberta Health and Wellness.

Notes: 1. Age-specific rate refers to number of induced abortions per 1,000 women in a specific age group.
2. The age-specific rates for age groups <15 and >44 are calculated based on female populations in 10-14 and 45-49 age groups respectively.
Populations are estimated at March 31, as viewed at September 30 of each year.

Table A43 Induced Abortions by Facility Type, Alberta, 1985 - 1999

Year	Total	Acute Care Hospital		Private Clinic	
		Cases	%	Cases	%
85	**6,499**	6,499	100.0	0	0.0
86	**6,237**	6,237	100.0	0	0.0
87	**5,465**	5,465	100.0	0	0.0
88	**6,203**	6,203	100.0	0	0.0
89	**6,502**	6,502	100.0	0	0.0
90	**6,559**	6,559	100.0	0	0.0
91	**6,803**	6,292	92.5	511	7.5
92	**8,552**	6,131	71.7	2,421	28.3
93	**8,905**	6,368	71.5	2,537	28.5
94	**8,983**	6,696	74.5	2,287	25.5
95	**8,906**	6,607	74.2	2,299	25.8
96	**9,240**	5,955	64.4	3,285	35.6
97	**10,313**	6,353	61.6	3,960	38.4
98	**10,346**	6,053	58.5	4,293	41.5
99	**10,164**	5,904	58.1	4,260	41.9

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.
Data include Alberta residents only.

Table A44 Induced Abortions by Facility Regions, Alberta, 1985 - 1999

Year	Total	Calgary (Hospitals and Clinics)		Edmonton (Hospitals and Clinics)		Rural Areas (Hospitals)	
		Cases	%	Cases	%	Cases	%
85	**6,499**	3,079	47.4	2,373	36.5	1,047	16.1
86	**6,237**	3,166	50.8	2,040	32.7	1,031	16.5
87	**5,465**	3,072	56.2	1,288	23.6	1,105	20.2
88	**6,203**	3,199	51.6	1,919	30.9	1,085	17.5
89	**6,502**	3,132	48.2	2,385	36.7	985	15.1
90	**6,559**	3,490	53.2	2,387	36.4	682	10.4
91	**6,803**	3,234	47.5	2,831	41.6	738	10.8
92	**8,552**	4,549	53.2	3,527	41.2	476	5.6
93	**8,905**	4,722	53.0	3,659	41.1	524	5.9
94	**8,983**	4,840	53.9	3,595	40.0	548	6.1
95	**8,906**	4,755	53.4	3,624	40.7	527	5.9
96	**9,240**	4,917	53.2	3,855	41.7	468	5.1
97	**10,313**	5,398	52.3	4,462	43.3	453	4.4
98	**10,346**	5,668	54.8	4,297	41.5	381	3.7
99	**10,164**	5,483	53.9	4,326	42.6	355	3.5

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.
Data include Alberta residents only.

Table A45 Induced Abortions and Induced Abortion Rate by Residence RHA, Alberta, 1986 - 1999

RHA	Year														
	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
Induced Abortions															
1	268	246	234	217	237	209	216	264	260	270	291	289	321	259	290
2	151	141	134	138	129	102	99	138	154	132	132	177	198	182	162
3	132	149	137	153	161	165	154	220	231	233	229	234	246	240	278
4	2,573	2,609	2,504	2,486	2,613	2,754	2,665	3,323	3,448	3,495	3,434	3,556	3,875	3,953	3,942
5	64	78	68	85	62	72	69	87	114	113	96	116	118	127	127
6	322	329	309	348	337	256	293	412	387	423	402	442	453	469	481
7	110	93	67	81	85	74	89	116	145	160	170	148	175	177	140
8	97	95	72	115	118	144	158	189	190	180	183	220	240	265	238
9	53	47	33	37	54	54	47	52	64	75	77	76	91	95	74
10	1,813	1,662	1,181	1,742	1,972	1,990	2,224	2,749	2,925	2,847	2,784	2,854	3,254	3,144	3,096
11	85	77	47	89	88	74	114	133	153	144	134	142	167	177	182
12	117	108	96	117	116	107	140	189	192	197	205	189	233	230	245
13	192	216	204	205	161	179	173	197	196	207	211	236	248	249	219
14	12	11	8	7	25	23	32	31	47	34	41	47	44	34	35
15	57	50	63	56	58	67	41	60	55	79	67	70	75	66	77
16	85	93	70	84	73	83	97	102	108	119	102	137	137	122	153
17	15	17	16	11	16	19	18	15	42	21	24	44	28	34	31
Unknown	76	41	41	54	35	45	35	30	19	24	111	139	61	16	15
Alberta	**6,222**	**6,062**	**5,284**	**6,025**	**6,340**	**6,417**	**6,664**	**8,307**	**8,730**	**8,753**	**8,693**	**9,116**	**9,964**	**9,839**	**9,785**
Induced Abortion Rate (per 1,000 Women Aged 15-49)															
1	8.0	7.2	6.8	6.3	6.9	6.0	6.1	7.4	7.3	7.5	8.0	8.0	8.8	7.1	7.8
2	7.6	6.9	6.6	6.8	6.3	5.0	4.8	6.7	7.4	6.2	6.1	8.1	8.9	8.0	6.9
3	9.9	10.9	9.8	10.7	11.1	11.0	9.9	13.8	14.0	13.6	13.0	12.9	13.1	12.4	13.9
4	13.0	12.6	12.0	11.7	12.1	12.5	11.9	14.6	15.1	15.2	14.7	15.0	15.9	15.6	15.1
5	5.8	7.0	6.1	7.6	5.5	6.3	6.0	7.4	9.4	9.2	7.6	9.1	9.2	9.6	9.3
6	8.1	8.0	7.5	8.4	8.0	6.0	6.7	9.3	8.6	9.4	8.8	9.6	9.7	9.7	9.6
7	4.6	3.8	2.8	3.4	3.6	3.1	3.7	4.8	6.0	6.5	6.9	5.9	7.0	7.0	5.5
8	5.1	4.9	3.7	5.8	5.9	7.0	7.5	8.7	8.7	8.1	7.9	9.4	10.1	11.0	9.6
9	6.3	5.4	3.8	4.2	6.0	5.9	5.0	5.4	6.7	7.8	8.0	7.8	9.3	9.5	7.4
10	9.1	8.0	5.6	8.3	9.3	9.2	10.2	12.5	13.2	12.9	12.8	13.2	15.0	14.3	13.8
11	4.8	4.2	2.6	4.9	4.8	3.9	5.9	6.8	7.6	7.1	6.6	7.0	8.2	8.6	8.7
12	4.6	4.1	3.7	4.5	4.4	4.1	5.3	7.1	7.2	7.4	7.7	7.1	8.7	8.5	9.0
13	8.6	9.2	8.7	8.8	7.5	8.4	8.0	9.1	9.2	9.6	9.5	10.3	10.6	10.3	8.9
14	4.5	4.0	3.0	2.6	5.6	4.3	6.1	6.0	9.2	6.6	8.0	9.2	8.7	6.7	6.8
15	11.2	9.1	11.3	9.8	10.1	11.5	6.9	9.9	9.0	12.6	10.3	10.7	11.2	9.8	11.3
16	7.2	7.6	6.1	7.4	6.4	7.2	8.3	8.7	9.3	10.4	9.1	12.2	11.7	10.0	12.4
17	4.3	4.6	4.3	2.9	4.1	4.9	4.6	3.8	10.3	5.0	5.6	9.9	5.9	6.9	6.1
Alberta	**9.5**	**8.9**	**7.7**	**8.8**	**9.1**	**9.1**	**9.3**	**11.5**	**11.9**	**11.9**	**11.8**	**12.2**	**13.2**	**12.7**	**12.4**

Source: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Fee-for-Service Claims Files, Alberta Health and Wellness.

Note: RHA boundaries are current as of 1998.

Table A46 Induced Abortions by Week of Gestation and Age Group, Alberta, 1997 - 1999

Age Group (Years)	Total	Week of Gestation											
		< 9		9 -12		13 -16		17-20		>20		Unknown	
		Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
1997													
<15	47	14	29.8	23	48.9	7	14.9	2	4.3	1	2.1		
15-17	911	353	38.7	432	47.4	94	10.3	30	3.3	2	0.2		
18-19	1,390	593	42.7	662	47.6	104	7.5	31	2.2	0	0.0		
15-19	2,301	946	41.1	1,094	47.5	198	8.6	61	2.7	2	0.1		
20-24	3,272	1,524	46.6	1,465	44.8	191	5.8	91	2.8	1	0.0		
25-29	2,081	1,101	52.9	826	39.7	111	5.3	42	2.0	1	0.0		
30-34	1,423	821	57.7	524	36.8	52	3.7	26	1.8	0	0.0		
35-39	903	504	55.8	330	36.5	48	5.3	21	2.3	0	0.0		
40-44	275	153	55.6	93	33.8	19	6.9	10	3.6	0	0.0		
>44	11	10	90.9	1	9.1	0	0.0	0	0.0	0	0.0		
Total	**10,313**	**5,073**	**49.2**	**4,356**	**42.2**	**626**	**6.1**	**253**	**2.5**	**5**	**0.0**		
1998													
<15	57	16	28.1	31	54.4	6	10.5	4	7.0	0	0.0	0	0.0
15-17	955	315	33.0	485	50.8	98	10.3	55	5.8	2	0.2	0	0.0
18-19	1,442	493	34.2	724	50.2	159	11.0	63	4.4	3	0.2	0	0.0
15-19	2,397	808	33.7	1,209	50.4	257	10.7	118	4.9	5	0.2	0	0.0
20-24	3,263	1407	43.1	1,491	45.7	259	7.9	101	3.1	3	0.1	2	0.1
25-29	2,109	995	47.2	892	42.3	143	6.8	74	3.5	5	0.2	0	0.0
30-34	1,321	702	53.1	511	38.7	73	5.5	29	2.2	4	0.3	2	0.2
35-39	898	489	54.5	329	36.6	39	4.3	34	3.8	5	0.6	2	0.2
40-44	280	156	55.7	101	36.1	9	3.2	12	4.3	2	0.7	0	0.0
>44	21	12	57.1	6	28.6	0	0.0	3	14.3	0	0.0	0	0.0
Total	**10,346**	**4,585**	**44.3**	**4,570**	**44.2**	**786**	**7.6**	**375**	**3.6**	**24**	**0.2**	**6**	**0.1**
1999													
<15	43	17	39.5	17	39.5	6	14.0	3	7.0	0	0.0		
15-17	892	269	30.2	468	52.5	103	11.5	50	5.6	2	0.2		
18-19	1,327	420	31.7	665	50.1	170	12.8	71	5.4	1	0.1		
15-19	2,219	689	31.1	1,133	51.1	273	12.3	121	5.5	3	0.1		
20-24	3,284	1293	39.4	1,577	48.0	299	9.1	111	3.4	4	0.1		
25-29	2,115	929	43.9	948	44.8	159	7.5	72	3.4	7	0.3		
30-34	1,336	646	48.4	528	39.5	108	8.1	46	3.4	8	0.6		
35-39	870	429	49.3	353	40.6	51	5.9	35	4.0	2	0.2		
40-44	286	129	45.1	129	45.1	14	4.9	13	4.5	1	0.3		
>44	11	5	45.5	5	45.5	0	0.0	1	9.1	0	0.0		
Total	**10,164**	**4,137**	**40.7**	**4,690**	**46.1**	**910**	**9.0**	**402**	**4.0**	**25**	**0.2**		

Source: Clinics Files, Alberta Health and Wellness.
Note: Data include Alberta residents only.

Table A47 Induced Abortions by Week of Gestation and Facility Type, Alberta, 1985 - 1999

Year	Total	Week of Gestation											
		<9		9-12		13-16		17-20		>20		Unknown	
		Cases	%	Cases	%	Cases	%	Cases	%	Cases	%	Cases	%
All Facilities													
85	6,499	1,914	29.5	4,037	62.1	408	6.3	132	2.0	8	0.1	0	0.0
86	6,237	1,576	25.3	4,047	64.9	451	7.2	159	2.5	4	0.1	0	0.0
87	5,465	1,521	27.8	3,408	62.4	341	6.2	186	3.4	9	0.2	0	0.0
88	6,203	1,692	27.3	3,838	61.9	477	7.7	188	3.0	8	0.1	0	0.0
89	6,502	1,785	27.5	4,388	67.5	265	4.1	54	0.8	9	0.1	1	0.0
90	6,559	2,055	31.3	4,256	64.9	200	3.0	44	0.7	4	0.1	0	0.0
91	6,803	1,324	19.5	5,089	74.8	338	5.0	49	0.7	3	0.0	0	0.0
92	8,552	2,585	30.2	5,179	60.6	637	7.4	144	1.7	7	0.1	0	0.0
93	8,905	2,460	27.6	5,606	63.0	651	7.3	180	2.0	8	0.1	0	0.0
94	8,983	2,643	29.4	5,584	62.2	549	6.1	198	2.2	9	0.1	0	0.0
95	8,906	2,500	28.1	5,691	63.9	502	5.6	195	2.2	18	0.2	0	0.0
96	9,240	3,510	38.0	5,016	54.3	490	5.3	217	2.3	7	0.1	0	0.0
97	10,313	5,073	49.2	4,356	42.2	626	6.1	253	2.5	5	0.0	0	0.0
98	10,346	4,585	44.3	4,570	44.2	786	7.6	375	3.6	24	0.2	6	0.1
99	10,164	4,137	40.7	4,690	46.1	910	9.0	402	4.0	25	0.2	0	0.0
Acute Care Hospitals													
85	6,499	1,914	29.5	4,037	62.1	408	6.3	132	2.0	8	0.1	0	0.0
86	6,237	1,576	25.3	4,047	64.9	451	7.2	159	2.5	4	0.1	0	0.0
87	5,465	1,521	27.8	3,408	62.4	341	6.2	186	3.4	9	0.2	0	0.0
88	6,203	1,692	27.3	3,838	61.9	477	7.7	188	3.0	8	0.1	0	0.0
89	6,502	1,785	27.5	4,388	67.5	265	4.1	54	0.8	9	0.1	1	0.0
90	6,559	2,055	31.3	4,256	64.9	200	3.0	44	0.7	4	0.1	0	0.0
91	6,292	1,284	20.4	4,747	75.4	219	3.5	39	0.6	3	0.0	0	0.0
92	6,131	2,098	34.2	3,869	63.1	117	1.9	43	0.7	4	0.1	0	0.0
93	6,368	1,889	29.7	4,295	67.4	140	2.2	38	0.6	6	0.1	0	0.0
94	6,696	2,030	30.3	4,485	67.0	132	2.0	44	0.7	5	0.1	0	0.0
95	6,607	1,550	23.5	4,853	73.5	139	2.1	53	0.8	12	0.2	0	0.0
96	5,955	1,938	32.5	3,790	63.6	151	2.5	74	1.2	2	0.0	0	0.0
97	6,353	2,907	45.8	2,983	47.0	352	5.5	108	1.7	3	0.0	0	0.0
98	6,053	2,338	38.6	3,115	51.5	380	6.3	203	3.4	17	0.3	0	0.0
99	5,904	2,053	34.8	3,212	54.4	421	7.1	197	3.3	21	0.4	0	0.0
Private Clinics													
91	511	40	7.8	342	66.9	119	23.3	10	2.0	0	0.0	0	0.0
92	2,421	487	20.1	1,310	54.1	520	21.5	101	4.2	3	0.1	0	0.0
93	2,537	571	22.5	1,311	51.7	511	20.1	142	5.6	2	0.1	0	0.0
94	2,287	613	26.8	1,099	48.1	417	18.2	154	6.7	4	0.2	0	0.0
95	2,299	950	41.3	838	36.5	363	15.8	142	6.2	6	0.3	0	0.0
96	3,285	1,572	47.9	1,226	37.3	339	10.3	143	4.4	5	0.2	0	0.0
97	3,960	2,166	54.7	1,373	34.7	274	6.9	145	3.7	2	0.1	0	0.0
98	4,293	2,247	52.3	1,455	33.9	406	9.5	172	4.0	7	0.2	6	0.1
99	4,260	2,084	48.9	1,478	34.7	489	11.5	205	4.8	4	0.1	0	0.0

Source: Clinics Files, Alberta Health and Wellness.

Notes: The clinics opened in the Fall of 1991.
Data include Alberta residents only.

Table A48 Induction Rates, Alberta, 1985 - 1999

Year	Total hospital deliveries[1]	Total Induction		Medical Induction[2]		Surgical Induction[3]		Combined Induction[4]		Spontaneous Labour	
		Cases	Rate[5]	Cases	Rate[5]	Cases	Rate[5]	Cases	Rate[5]	Cases	Rate[5]
85	**43,628**	5,495	12.6	3,756	8.6	1,134	2.6	605	1.4	38,133	87.4
86	**43,675**	6,258	14.3	4,149	9.5	1,387	3.2	722	1.7	37,417	85.7
87	**41,910**	5,165	12.3	3,645	8.7	1,051	2.5	469	1.1	36,745	87.7
88	**41,983**	5,040	12.0	3,450	8.2	1,057	2.5	533	1.3	36,943	88.0
89	**43,272**	7,085	16.4	4,259	9.8	1,462	3.4	1,364	3.2	36,187	83.6
90	**43,024**	7,306	17.0	4,487	10.4	1,314	3.1	1,505	3.5	35,718	83.0
91	**42,676**	7,269	17.0	4,556	10.7	1,354	3.2	1,359	3.2	35,407	83.0
92	**41,727**	6,964	16.7	4,232	10.1	1,275	3.1	1,457	3.5	34,763	83.3
93	**40,043**	8,484	21.2	4,356	10.9	2,390	6.0	1,738	4.3	31,559	78.8
94	**39,554**	8,642	21.8	4,698	11.9	2,256	5.7	1,688	4.3	30,912	78.2
95	**38,462**	8,414	21.9	5,179	13.5	1,596	4.1	1,639	4.3	30,048	78.1
96	**37,312**	8,495	22.8	5,757	15.4	1,095	2.9	1,643	4.4	28,817	77.2
97	**36,387**	8,578	23.6	6,428	17.7	647	1.8	1,503	4.1	27,809	76.4
98	**37,432**	9,004	24.1	6,932	18.5	559	1.5	1,513	4.0	28,428	75.9
99	**37,898**	9,599	25.3	7,320	19.3	605	1.6	1,674	4.4	28,299	74.7

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

ICD-9 codes: All ICD-9 codes are based on the first three diagnostic codes and the first three procedure codes in the Hospital Morbidity Files.

1. Hospital delivery: Diagnostic codes 640-648 if 5th digit=1 or 2 or 650 or 651-676 if 5th digit=1 or 2 or V27 or procedure codes 72.0 to 74.99
2. Medical induction: Procedure codes 73.4 without 73.01 or 73.1
3. Surgical induction: procedure codes 73.01 and/or 73.1 without 73.4
4. Combined induction: procedure codes: 73.4 with 73.01 and/or 73.1
5. Rate = Cases / Total hospital deliveries * 100

Data include 'out of province' cases.

Table A49 Induction Rates by Residence RHA, Alberta, 1997 - 1999

Residence RHA[6,7]	Total hospital deliveries[1]	Total Induction		Medical Induction[2]		Surgical Induction[3]		Combined Induction[4]	
		Cases	Rate[5]	Cases	Rate[5]	Cases	Rate[5]	Cases	Rate[5]
1997									
1	2,100	529	25.2	477	22.7	39	1.9	13	0.6
2	1,159	127	11.0	116	10.0	7	0.6	4	0.3
3	860	187	21.7	140	16.3	18	2.1	29	3.4
4	10,889	2,109	19.4	1,408	12.9	200	1.8	501	4.6
5	641	123	19.2	87	13.6	6	0.9	30	4.7
6	2,452	591	24.1	419	17.1	40	1.6	132	5.4
7	990	204	20.6	173	17.5	12	1.2	19	1.9
8	1,123	276	24.6	205	18.3	25	2.2	46	4.1
9	500	157	31.4	133	26.6	10	2.0	14	2.8
10	9,295	2,744	29.5	2,005	21.6	187	2.0	552	5.9
11	1,059	281	26.5	208	19.6	19	1.8	54	5.1
12	1,473	411	27.9	353	24.0	21	1.4	37	2.5
13	1,236	288	23.3	271	21.9	10	0.8	7	0.6
14	302	46	15.2	46	15.2	0	0.0	0	0.0
15	485	83	17.1	72	14.8	8	1.6	3	0.6
16	555	168	30.3	117	21.1	24	4.3	27	4.9
17	518	105	20.3	89	17.2	8	1.5	8	1.5
Unknown	750	149	19.9	109	14.5	13	1.7	27	3.6
Alberta	**36,387**	**8,578**	**23.6**	**6,428**	**17.7**	**647**	**1.8**	**1,503**	**4.1**
1998									
1	2,001	463	23.1	428	21.4	20	1.0	15	0.7
2	1,217	115	9.4	104	8.5	5	0.4	6	0.5
3	869	169	19.4	120	13.8	17	2.0	32	3.7
4	11,307	2,552	22.6	1,798	15.9	187	1.7	567	5.0
5	638	131	20.5	113	17.7	4	0.6	14	2.2
6	2,446	637	26.0	442	18.1	32	1.3	163	6.7
7	1,199	306	25.5	266	22.2	17	1.4	23	1.9
8	1,112	284	25.5	223	20.1	20	1.8	41	3.7
9	488	144	29.5	120	24.6	6	1.2	18	3.7
10	9,699	2,590	26.7	1,997	20.6	127	1.3	466	4.8
11	1,066	263	24.7	220	20.6	11	1.0	32	3.0
12	1,503	378	25.1	311	20.7	32	2.1	35	2.3
13	1,296	330	25.5	295	22.8	31	2.4	4	0.3
14	321	60	18.7	55	17.1	4	1.2	1	0.3
15	508	141	27.8	108	21.3	13	2.6	20	3.9
16	582	192	33.0	144	24.7	7	1.2	41	7.0
17	490	103	21.0	82	16.7	13	2.7	8	1.6
Unknown	690	146	21.2	106	15.4	13	1.9	27	3.9
Alberta	**37,432**	**9,004**	**24.1**	**6,932**	**18.5**	**559**	**1.5**	**1,513**	**4.0**
1999									
1	2,043	497	24.3	468	22.9	20	1.0	9	0.4
2	1,201	154	12.8	140	11.7	7	0.6	7	0.6
3	853	151	17.7	97	11.4	21	2.5	33	3.9
4	11,403	2,958	25.9	1,992	17.5	256	2.2	710	6.2
5	673	149	22.1	128	19.0	6	0.9	15	2.2
6	2,591	674	26.0	478	18.4	32	1.2	164	6.3
7	1,173	292	24.9	250	21.3	15	1.3	27	2.3
8	1,147	273	23.8	205	17.9	15	1.3	53	4.6
9	482	139	28.8	125	25.9	3	0.6	11	2.3
10	9,817	2,742	27.9	2,114	21.5	126	1.3	502	5.1
11	1,150	306	26.6	247	21.5	17	1.5	42	3.7
12	1,457	396	27.2	320	22.0	35	2.4	41	2.8
13	1,369	285	20.8	275	20.1	6	0.4	4	0.3
14	283	47	16.6	41	14.5	3	1.1	3	1.1
15	457	109	23.9	96	21.0	7	1.5	6	1.3
16	566	184	32.5	158	27.9	7	1.2	19	3.4
17	472	56	11.9	44	9.3	10	2.1	2	0.4
Unknown	761	187	24.6	142	18.7	19	2.5	26	3.4
Alberta	**37,898**	**9,599**	**25.3**	**7,320**	**19.3**	**605**	**1.6**	**1,674**	**4.4**

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

ICD-9 codes: All ICD-9 codes are based on the first three diagnostic codes and the first three procedure codes in the Hospital Morbidity Files.

Notes:

1. Hospital delivery: Diagnostic codes 640-648 if 5th digit=1 or 2 or 650 or 651-676 if 5th digit=1 or 2 or V27 or procedure codes 72.0 to 74.99
2. Medical induction: Procedure codes 73.4 without 73.01 or 73.1
3. Surgical induction: procedure codes 73.01 and/or 73.1 without 73.4
4. Combined induction: procedure codes: 73.4 with 73.01 and/or 73.1
5. Rate = Cases / Total hospital deliveries * 100
6. RHA boundaries are current as of 1998
7. RHAs are by residence of mothers

Data include 'out of province' cases.

Table A50 Epidural Rate by Facility RHA, Alberta, 1998, Compared to Rates in 1994

Facility RHA	Total Pregnancies, 1998	Epidural Analgesia in Labour, 1998	Epidural Rates, 1998	Epidural Rates, 1994[1]
1	2,079	211	10.1	6.0
2	1,242	16	1.3	0.0
3	562	76	13.5	5.6
4	12,078	5,241	43.4	25.6
5	366	36	9.8	5.7
6	2,300	118	5.1	3.9
7	837	71	8.5	3.3
8	433	158	36.5	35.0
9	575	23	4.0	0.5
10	12,028	3,979	33.1	14.5
11	535	42	7.9	0.0
12	1,124	58	5.2	0.6
13	1,285	7	0.5	3.8
14	342	9	2.6	0.0
15	393	13	3.3	0.0
16	639	187	29.3	0.3
17	411	0	0.0	0.0
Alberta	**37,229**	**10,245**	**27.5**	**14.0**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes: 1. As reported in the Alberta Medical Association's Final Report from the AD HOC COMMITTEE ON EPIDURAL ANALGESIA IN LABOUR & DELIVERY, November 1996.

RHA boundaries are current as of 1998.

Table A51 Epidural Rate by Level of FHospital, Alberta, 1998

Hospitals	Total Pregnancies	Epidural analgesia in labour	Percent of Births with Epidural in Labour[1]
Level III			
Foothills	4,253	2,254	53.0
Royal Alexandra/University of Alberta Hospital	4,498	1,564	34.8
Level III Total	**8,751**	**3,818**	**43.6**
Level II			
Rockyview General Hospital	4,011	1,678	41.8
Misericordia Hospital	2,549	739	29.0
Grey Nuns Hospital	3,479	1,676	48.2
Grande Prairie	1,061	7	0.7
Lethbridge Regional Hospital	1,589	184	11.6
Medicine Hat Regional Hospital	936	16	1.7
Red Deer General Hospital	1,702	102	6.0
Peter Lougheed Centre	3,814	1,309	34.3
Level II Total	**19,141**	**5,711**	**29.8**
Level I			
North	7,404	573	7.7
South	1,933	143	7.4
Level I Total	**9,337**	**716**	**7.7**
Alberta	**37,229**	**10,245**	**27.5**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Note: 1. Number of women with epidural analgesia in labour / total pregnancies.

Table A52 Operative and Vaginal Breech Deliveries, Alberta, 1985 - 1999

Year	Total Hospital Deliveries[1]	Cesarean Section[2]		Forceps[3]		Vacuum Extraction[4]		Forceps and/or Vacuum		Vaginal Breech Delivery[5]	
		Cases	Rate[6]	Cases	Rate[6]	Cases	Rate[6]	Cases	Rate[6]	Cases	Rate[6]
85	43,628	7,270	16.7	6,380	14.6	132	0.3	6,512	14.9	454	1.0
86	43,675	7,130	16.3	6,068	13.9	324	0.7	6,392	14.6	389	0.9
87	41,910	7,142	17.0	5,229	12.5	653	1.6	5,882	14.0	343	0.8
88	41,983	7,190	17.1	5,083	12.1	910	2.2	5,993	14.3	350	0.8
89	43,272	7,057	16.3	5,034	11.6	1,662	3.8	6,696	15.5	426	1.0
90	43,024	6,911	16.1	4,463	10.4	2,270	5.3	6,733	15.6	419	1.0
91	42,676	6,846	16.0	3,909	9.2	2,608	6.1	6,517	15.3	393	0.9
92	41,727	6,646	15.9	3,445	8.3	3,008	7.2	6,453	15.5	337	0.8
93	40,043	6,314	15.8	3,241	8.1	3,051	7.6	6,292	15.7	378	0.9
94	39,554	6,214	15.7	3,241	8.2	3,266	8.3	6,507	16.5	342	0.9
95	38,462	6,061	15.8	2,793	7.3	3,619	9.4	6,412	16.7	339	0.9
96	37,312	6,069	16.3	2,669	7.2	3,737	10.0	6,406	17.2	346	0.9
97	36,387	6,005	16.5	2,617	7.2	3,873	10.6	6,490	17.8	280	0.8
98	37,432	6,461	17.3	2,421	6.5	4,087	10.9	6,508	17.4	261	0.7
99	37,898	7,234	19.1	2,464	6.5	4,152	11.0	6,616	17.5	264	0.7

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

ICD-9 codes: All ICD-9 codes are based on the first three diagnostic codes and the first three procedure codes in the Hospital Morbidity Files.

1. Hospital delivery: Diagnostic codes 640-648 if 5th digit=1 or 2 or 650 or 651-676 if 5th digit=1 or 2 or V27 or procedure codes 72.0 to 74.99
2. Cesarean section: Procedure code 74.0, 74.1, 74.2, 74.4, 74.99.
3. Forceps: Procedure 72.0 or 72.1 or 72.2 or 72.21 or 72.29 or 72.3 or 72.31 or 72.39.
4. Vacuum Extraction: Procedure 72.7.
5. Vaginal breech: Diagnostic code 652.2 or procedure codes 72.5 or 72.6.
6. Rate = Cases / Total hospital deliveries x 100.

Table A53 Methods of Delivery by Residence RHA, Alberta, 1997 - 1999

Residence RHA[8,9]	Total hospital deliveries[1]	Cesarean Section[2]		Forceps[3]		Vacuum Extraction[4]		Vaginal Breech Delivery[5]		Other[6]	
		Cases	Rate[7]	Cases	Rate[7]	Cases	Rate[7]	Cases	Rate[7]	Cases	Rate[7]
1997											
1	2,100	304	14.5	94	4.5	205	9.8	11	0.5	397	18.9
2	1,159	116	10.0	36	3.1	120	10.4	13	1.1	136	11.7
3	860	141	16.4	47	5.5	90	10.5	13	1.5	126	14.7
4	10,889	1,776	16.3	1,056	9.7	1,340	12.3	107	1.0	3,021	27.7
5	641	119	18.6	53	8.3	73	11.4	5	0.8	108	16.8
6	2,452	432	17.6	133	5.4	47	1.9	26	1.1	756	30.8
7	990	222	22.4	69	7.0	67	6.8	3	0.3	84	8.5
8	1,123	157	14.0	61	5.4	150	13.4	5	0.4	146	13.0
9	500	62	12.4	32	6.4	57	11.4	2	0.4	50	10.0
10	9,295	1,608	17.3	726	7.8	1,117	12.0	64	0.7	359	3.9
11	1,059	144	13.6	67	6.3	109	10.3	7	0.7	158	14.9
12	1,473	272	18.5	78	5.3	230	15.6	5	0.3	136	9.2
13	1,236	187	15.1	10	0.8	66	5.3	1	0.1	47	3.8
14	302	65	21.5	10	3.3	21	7.0	1	0.3	8	2.6
15	485	58	12.0	21	4.3	32	6.6	5	1.0	58	12.0
16	555	145	26.1	58	10.5	34	6.1	2	0.4	36	6.5
17	518	64	12.4	7	1.4	49	9.5	1	0.2	3	0.6
Unknown	750	133	17.7	59	7.9	66	8.8	9	1.2	77	10.3
Alberta	**36,387**	**6,005**	**16.5**	**2,617**	**7.2**	**3,873**	**10.6**	**280**	**0.8**	**5,706**	**15.7**
1998											
1	2,001	294	14.7	104	5.2	199	9.9	24	1.2	374	18.7
2	1,217	147	12.1	27	2.2	103	8.5	10	0.8	147	12.1
3	869	157	18.1	66	7.6	89	10.2	9	1.0	159	18.3
4	11,307	1,983	17.5	927	8.2	1,437	12.7	84	0.7	2,331	20.6
5	638	111	17.4	41	6.4	67	10.5	3	0.5	115	18.0
6	2,446	447	18.3	116	4.7	48	2.0	18	0.7	278	11.4
7	1,199	246	20.5	73	6.1	129	10.8	6	0.5	55	4.6
8	1,112	169	15.2	72	6.5	157	14.1	6	0.5	112	10.1
9	488	53	10.9	21	4.3	54	11.1	1	0.2	43	8.8
10	9,699	1,728	17.8	711	7.3	1,168	12.0	78	0.8	334	3.4
11	1,066	157	14.7	55	5.2	142	13.3	2	0.2	158	14.8
12	1,503	277	18.4	64	4.3	211	14.0	4	0.3	141	9.4
13	1,296	214	16.5	15	1.2	93	7.2	5	0.4	55	4.2
14	321	72	22.4	3	0.9	26	8.1	1	0.3	13	4.0
15	508	89	17.5	20	3.9	23	4.5	3	0.6	29	5.7
16	582	125	21.5	67	11.5	28	4.8	3	0.5	53	9.1
17	490	59	12.0	9	1.8	52	10.6	0	0.0	2	0.4
Unknown	690	133	19.3	30	4.3	61	8.8	4	0.6	78	11.3
Alberta	**37,432**	**6,461**	**17.3**	**2,421**	**6.5**	**4,087**	**10.9**	**261**	**0.7**	**4,477**	**12.0**
1999											
1	2,043	367	18.0	62	3.0	201	9.8	12	0.6	352	17.2
2	1,201	182	15.2	34	2.8	109	9.1	8	0.7	381	31.7
3	853	176	20.6	51	6.0	78	9.1	8	0.9	177	20.8
4	11,403	2,283	20.0	931	8.2	1,470	12.9	108	0.9	2,114	18.5
5	673	145	21.5	38	5.6	73	10.8	4	0.6	117	17.4
6	2,591	511	19.7	119	4.6	52	2.0	15	0.6	1265	48.8
7	1,173	269	22.9	76	6.5	133	11.3	9	0.8	106	9.0
8	1,147	186	16.2	58	5.1	147	12.8	3	0.3	207	18.0
9	482	55	11.4	16	3.3	58	12.0	6	1.2	74	15.4
10	9,817	1,850	18.8	810	8.3	1,194	12.2	64	0.7	409	4.2
11	1,150	185	16.1	51	4.4	142	12.3	5	0.4	243	21.1
12	1,457	304	20.9	71	4.9	173	11.9	4	0.3	151	10.4
13	1,369	244	17.8	14	1.0	100	7.3	5	0.4	271	19.8
14	283	69	24.4	3	1.1	30	10.6	1	0.4	27	9.5
15	457	88	19.3	13	2.8	23	5.0	2	0.4	105	23.0
16	566	129	22.8	53	9.4	41	7.2	1	0.2	58	10.2
17	472	67	14.2	7	1.5	63	13.3	1	0.2	205	43.4
Unknown	761	124	16.3	57	7.5	65	8.5	8	1.1	154	20.2
Alberta	**37,898**	**7,234**	**19.1**	**2,464**	**6.5**	**4,152**	**11.0**	**264**	**0.7**	**6,416**	**16.9**

Source: Canadian Institute of Health Information Inpatient Files, Alberta Health and Wellness.

ICD-9 codes: All ICD-9 codes are based on the first three diagnostic codes and the first three procedure codes in the Hospital Morbidity Files.

1. Hospital delivery: Diagnostic codes 640-648 if 5th digit=1 or 2 or 650 or 651-676 if 5th digit=1 or 2 or V27 or procedure codes 72.0 to 74.99.
2. Cesarean section: Procedure code 74.0, 74.1, 74.2, 74.4, 74.99.
3. Forceps: Procedure 72.0 or 72.1 or 72.2 or 72.21 or 72.29 or 72.3 or 72.31 or 72.39.
4. Vacuum Extraction: Procedure 72.7.
5. Vaginal breech: Diagnostic code 652.2 or procedure codes 72.5 or 72.6.
6. Other: Procedure 72.8 or 72.9 or 73.2 or 73.5 or 73.8 or 73.9.
7. Rate = Cases / Total hospital deliveries x 100.

Notes:

8. RHA boundaries are current as of 1998.
9. RHAs are by residence of mothers.

Data include 'out of province' cases.

Table A54 Cesarean Sections (All Weights), Primary and Repeat Rates by Facility RHA, Alberta, 1998

Facility RHA	Total Mothers Delivered	Pregnancies Delivered by Cesarean Section		Primary Cesarean Section			Repeat Cesarean Section		Cesarean Section Perinatal & Neonatal Deaths		Trial of Labour		VBAC[1]		
		Total	Rate[2]	Cases	Rate[3]*	% of total[4]	Cases	Rate[5]	Cases	Rate[6]	Attempted[7]	Attempted Rate[8]	Successful	Rate[9]	Success Rate[10]
1	2,079	317	15.2	201	9.7	63.4	116	5.6	0	0.0	93	47.0	82	41.4	88.2
2	1,242	131	10.5	85	6.8	64.9	46	3.7	1	7.6	70	72.2	51	52.6	72.9
3	562	81	14.4	55	9.8	67.9	26	4.6	0	0.0	20	48.8	15	36.6	75.0
4	12,078	2,162	17.9	1,470	12.2	68.0	692	5.7	23	10.6	787	62.4	570	45.2	72.4
5	366	57	15.6	30	8.2	52.6	27	7.4	0	0.0	13	35.1	10	27.0	76.9
6	2,300	433	18.8	272	11.8	62.8	161	7.0	2	4.6	114	47.7	78	32.6	68.4
7	837	170	20.3	91	10.9	53.5	79	9.4	2	11.8	37	35.2	26	24.8	70.3
8	433	49	11.3	39	9.0	79.6	10	2.3	0	0.0	9	50.0	8	44.4	88.9
9	575	41	7.1	20	3.5	48.8	21	3.7	0	0.0	38	70.4	33	61.1	86.8
10	12,028	2,268	18.9	1,495	12.4	65.9	773	6.4	26	11.5	647	50.0	522	40.3	80.7
11	535	53	9.9	34	6.4	64.2	19	3.6	0	0.0	19	50.0	19	50.0	100.0
12	1,124	176	15.7	115	10.2	65.3	61	5.4	0	0.0	36	37.9	34	35.8	94.4
13	1,285	87	6.8	59	4.6	67.8	28	2.2	0	0.0	56	94.9	31	52.5	55.4
14	342	78	22.8	51	14.9	65.4	27	7.9	1	12.8	11	32.4	7	20.6	63.6
15	393	52	13.2	34	8.7	65.4	18	4.6	0	0.0	11	40.7	9	33.3	81.8
16	639	129	20.2	86	13.5	66.7	43	6.7	1	7.8	33	47.8	26	37.7	78.8
17	411	29	7.1	19	4.6	65.5	10	2.4	0	0.0	12	54.5	12	54.5	100.0
Alberta	**37,229**	**6,313**	**17.0**	**4,156**	**11.2**	**65.8**	**2,157**	**5.8**	**56**	**8.9**	**2,006**	**54.4**	**1,533**	**41.5**	**76.4**

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes: 1. VBAC = Vaginal Birth After Cesarean.

2. (Total Cesarean Sections / Total Mothers Delivered) x 100.

3. (Primary Cesarean Sections / Total Mothers Delivered) x 100.

4. (Primary Cesarean Sections / Total Pregnancies Delivered by Cesarean Section) x 100.

5. (Repeat Cesarean Sections / Total Mothers Delivered) x 100.

6. (Cesarean Section Deaths (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths)/Total Pregnancies Delivered by Cesarean Section) x 1000.

7. Failed VBAC's + Succcesful VBAC's.

8. (Attempted VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.

9. (Successful VBAC's / (Repeat Cesarean Sections + Successful VBAC's)) x 100.

10. Successful VBAC's / Attempted VBAC'sx 100.

* Excludes out-of-hospital births.

RHA boundaries are current as of 1998.

Table A55 Cesarean Section and Vaginal Birth After Cesarean (VBAC) Rates, Alberta, 1992 - 1998

Year	Cesarean Section Rate[1]	Repeat Cesarean Section Rate[2]	Trial of Labour Rate[3]	VBAC Rate[4]	VBAC Success Rate[5]
92	15.9	5.9	51.0	40.0	77.0
93	15.7	5.9	52.0	39.0	74.0
94	15.8	5.7	60.5	43.0	71.0
95	15.8	5.5	58.3	42.9	73.6
96	16.2	5.5	58.3	44.0	75.5
97	16.5	6.0	56.5	38.8	68.7
98	17.0	5.8	54.4	41.5	76.4

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:

1. Cesarean Sections / Total Mothers Delivered X 100.
2. (Repeat Cesarean Sections / Total Mothers Delivered) x 100.
3. Attempted Vaginal Births After Cesarean (VBAC's) / (Repeat Cesarean Sections + Successful VBAC's) X 100.
4. Successful VBAC's / (Repeat Cesarean Sections + Successful VBAC's) X 100.
5. Successful VBAC's / Attempted VBAC's X 100.

Table A56 Breech Deliveries by Level of Hospital, Alberta, 1998

Level of hospital	Total Breech Births	Vaginal Delivery	% of Breech Vaginal delivery	Caesarean Section	% of Breech Caesarean delivery
Level III	753	368	48.9	385	51.1
Level II	750	172	22.9	578	77.1
Level I	332	155	46.7	177	53.3
Out of Hospital	1	1	100.0	0	0.0
Total	**1,836**	**696**	**37.9**	**1,140**	**62.1**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A57 Breech Presentation Mortality Rates by Level of Hospital, Alberta, 1998

Perinatal Mortality

Level of hospital	Stillbirths	Early Neonatal Deaths	Perinatal Deaths With Anomalies	Perinatal Mortality Rate (PMR)[1]	Corrected PMR[2]	Perinatal Death Vaginal Delivery	PMR for Vaginal Delivery[1]	Perinatal Death Cesarean Section	PMR for Cesarean Section[1]
Level III	34	17	1	67.7	66.5	44	119.6	7	18.2
Level II	11	6	2	22.7	20.1	14	81.4	3	5.2
Level I	6	3	0	27.1	27.1	9	58.1	0	0.0
Out of Hospital	0	1	0	1000.0	1000.0	1	1000.0	0	0.0
Total	**51**	**27**	**3**	**42.5**	**40.9**	**68**	**97.7**	**10**	**8.8**

Neonatal Mortality

Level of hospital	Early Neonatal Deaths	Late Neonatal Deaths	Neonatal Deaths With Anomalies	Neonatal Mortality Rate (NMR)[3]	Corrected NMR[2]	Neonatal Death Vaginal Delivery	NMR for Vaginal Delivery[3]	Neonatal Death Cesarean Section	NMR for Cesarean Section[3]
Level III	17	4	6	29.2	21.0	15	44.4	6	15.6
Level II	6	3	6	12.2	4.1	5	31.1	4	6.9
Level I	3	0	1	9.2	6.2	3	20.1	0	0.0
Out of Hospital	1	0	0	1000.0	1000.0	1	1000.0	0	0.0
Total	**27**	**7**	**13**	**19.0**	**11.9**	**24**	**37.0**	**10**	**8.8**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes:
1. Rate per 1,000 total breech presentation births.
2. Corrected rates exclude deaths due to major anomalies.
3. Rate per 1,000 live breech presentation births.

Table A58 Breech Presentation Mortality Rates, Alberta, 1994 - 1998

Perinatal Mortality

Year	Stillbirths	Early Neonatal Deaths	Perinatal Deaths With Anomalies	Perinatal Mortality Rate (PMR)[1]	Corrected PMR[2]	Perinatal Death Vaginal Delivery	PMR for Vaginal Delivery[1]	Perinatal Death Caesarean Section	PMR for Caesarean Section[1]
94	68	47	25	69.5	55.2	92	164.9	23	21.0
95	62	54	27	71.2	55.5	97	193.2	19	16.8
96	79	44	31	79.2	60.4	104	214.4	19	17.8
97	74	44	31	83.2	62.7	102	286.5	16	15.1
98	51	27	3	42.5	40.9	68	97.7	10	8.8

Neonatal Mortality

Year	Early Neonatal Deaths	Late Neonatal Deaths	Neonatal Deaths With Anomalies	Neonatal Mortality Rate (NMR)[3]	Corrected NMR[2]	Neonatal Death Vaginal Delivery	NMR for Vaginal Delivery[3]	Neonatal Death Caesarean Section	NMR for Caesarean Section[3]
94	47	4	12	32.2	24.8	31	62.4	19	17.4
95	54	6	14	38.3	29.6	42	94.2	18	16.0
96	44	1	14	30.5	21.2	28	68.5	17	16.0
97	44	4	13	35.7	26.3	31	109.2	17	16.0
98	27	7	13	19.0	11.9	24	37.0	10	8.8

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes:
1. Rate per 1,000 total breech presentation births.
2. Corrected rates exclude deaths due to major anomalies.
3. Rate per 1,000 live breech presentation births.

Table A59 Weight Specific Perinatal and Neonatal Mortality, Alberta, 1998

Birth Weight (Grams)	Perinatal					Neonatal				
	Total Births	Perinatal Deaths	Perinatal Deaths Excluding Major Congenital Anomalies	Perinatal Mortality Rate[1]	Corrected Perinatal Mortality Rate[2]	Live Births[3]	Neonatal Deaths	Neonatal Deaths Excluding Major Congenital Anomalies	Neonatal Mortality Rate[4]	Corrected Neonatal Mortality Rate[5]
<500	108	107	72	990.7	986.3	31	30	19	968	950.0
500 - 749	92	55	36	597.8	493.2	60	29	22	483.3	415.1
750 - 999	84	13	8	154.8	101.3	78	8	6	102.6	78.9
1000 - 1249	102	15	9	147.1	93.8	96	12	6	125.0	66.7
1250 - 1499	112	9	6	80.4	55.0	107	4	1	37.4	9.6
1500 - 1749	194	11	7	56.7	36.8	189	5	1	26.5	5.4
1750 - 1999	278	10	7	36.0	25.5	272	4	0	14.7	0.0
2000 - 2499	1,512	24	17	15.9	11.3	1,502	9	3	6.0	2.0
2500 - 2999	5,689	16	11	2.8	1.9	5,667	7	3	1.2	0.5
3000 - 3999	25,004	36	30	1.4	1.2	24,978	19	9	0.8	0.4
4000 - 4499	4,001	7	7	1.7	1.7	3,996	5	2	1.3	0.5
≥4,500	644	2	2	3.1	3.1	642	0	0	0.0	0.0
Total	**37,820**	**305**	**212**	**8.1**	**5.6**	**37,618**	**132**	**72**	**3.5**	**1.9**

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.
Vital Statistics Annual Review 1998, Alberta Vital Statistics.

Notes:
1. ((Stillbirths + Early Neonatal Deaths) / Total Births) x 1000.
2. (((Stillbirths + Early Neonatal Deaths) - Congenital Anomalies) / (Total Births - Congenital Anomalies)) x 1000.
3. Figures obtained from Vital Statistics Annual Review 1998; excludes 2 births and 3 perinatal deaths (1 stillbirth and 2 neonatal deaths) with no recorded weights.
4. ((Early Neonatal Deaths + Late Neonatal Deaths) / Live Births) x 1000.
5. ((Early Neonatal Deaths + Late Neonatal Deaths - Congenital Anomalies) / (Live Births - Congenital Anomalies)) x 1000.

Table A60 Weight Specific Perinatal and Neonatal Mortality, Alberta, 1994 - 1998 Combined

Birth Weight (Grams)	Perinatal					Neonatal				
	Total Births	Perinatal Deaths	Perinatal Deaths Excluding Major Congenital Anomalies	Perinatal Mortality Rate[1]	Corrected Perinatal Mortality Rate[2]	Live Births[3]	Neonatal Deaths	Neonatal Deaths Excluding Major Congenital Anomalies	Neonatal Mortality Rate[4]	Corrected Neonatal Mortality Rate[5]
<500	549	564	452	1000.0[6]	1000.0[6]	190	177	151	931.6	920.7
500 - 749	537	353	286	657.4	608.5	351	198	179	564.1	539.2
750 - 999	455	110	80	241.8	188.2	386	56	41	145.1	110.5
1000 - 1249	528	90	51	170.5	104.3	475	44	21	92.6	46.5
1250 - 1499	608	60	34	98.7	58.4	570	25	7	43.9	12.7
1500 - 1749	928	76	51	81.9	56.5	872	21	5	24.1	5.8
1750 - 1999	1,425	85	56	59.6	40.1	1,366	29	7	21.2	5.2
2000 - 2499	7,590	138	83	18.2	11.0	7,507	58	14	7.7	1.9
2500 - 2999	29,698	148	108	5.0	3.6	29,582	63	20	2.1	0.7
3000 - 3999	128,126	240	190	1.9	1.5	127,933	118	59	0.9	0.5
4000 - 4499	18,973	24	23	1.3	1.2	18,957	14	9	0.7	0.5
>=4500	3,305	15	14	4.5	4.2	3,292	2	2	0.6	0.6
Total	**192,722**	**1,903**	**1,428**	**9.9**	**7.4**	**191,481**	**805**	**515**	**4.2**	**2.7**

Sources: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.
Vital Statistics Annual Review 1998, Alberta Vital Statistics.

Notes:

1. ((Perinatal Deaths) / Total Births) x 1000.
2. ((Perinatal Deaths - Congenital Anomalies) / (Total Births - Congenital Anomalies)) x 1000.
3. Figures obtained from Vital Statistics Annual Review 1994 - 1998; excludes births < 500 grams and 4 stillbirths not weighed.
4. ((Early Neonatal Death + Late Neonatal Deaths) / Live Births) x 1000.
5. ((Early Neonatal Deaths + Late Neonatal Deaths - Congenital Anomalies) / (Live Births - Congenital Anomalies)) x 1000.
6. Perinatal Deaths total more than Total Births in this category due to the fact that some live births and stillbirths are inconsistently registered. Total birth numbers are from the Vital Statistics database, in which some births <500 grams are apparently not registered. The perinatal deaths come from the Medical Records database, which contains the death records for these unregistered births. The rates have consequently been adjusted downward to 1,000 to correct for this fact.

Table A61 Perinatal and Neonatal Mortality Rates by Length of Gestation, Alberta, 1998

Gestational Age (Weeks)	Live Births[1]	% of Total Deaths[2]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (per 1,000 total births)[3,4]	Neonatal Mortality Rate (per 1,000 live births)[4]
<24	48	35.6	73	43	3	958.7	958.3
24	17	6.3	11	10	0	750.0	588.2
25	31	5.7	8	10	1	461.5	354.8
26	32	1.8	4	1	1	138.9	62.5
27	41	3.9	9	3	1	240.0	97.6
28	53	2.1	4	3	0	122.8	56.6
29	50	2.4	4	2	2	111.1	80.0
30	75	2.7	8	1	0	108.4	13.3
31	81	1.5	2	3	0	60.2	37.0
32	177	3.0	6	4	0	54.6	22.6
33	215	1.5	4	0	1	18.3	4.7
34	330	2.7	4	3	2	21.0	15.2
35	562	3.3	9	2	0	19.3	3.6
36	1116	3.9	9	4	0	11.6	3.6
37	2207	3.9	8	2	3	4.5	2.3
38	5497	6.0	12	4	4	2.9	1.5
39	8768	4.8	10	3	3	1.5	0.7
40	11969	7.2	13	8	3	1.8	0.9
41	5691	1.5	3	1	1	0.7	0.4
42	633	0.3	0	0	1	0.0	1.6
>42	24	0.0	0	0	0	0.0	0.0
Total	**37,617**	**100.0**	**201**	**107**	**26**	**8.1**	**3.5**

Sources: Vital Statistics Annual Review 1998, Alberta Vital Statistics.
Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Gestational age was not specified for 2 live births.
2. Total number of deaths = 334.
3. Total Births = Live births + Stillbirths.
4. Perinatal and neonatal mortality rates are not corrected.

Table A62 Perinatal and Neonatal Mortality Rates by Length of Gestation, Alberta, 1994 - 1998 Combined

Gestational Age (Weeks)	Live Births*	% of Total Deaths[1]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (per 1,000 total births)[2,3]	Neonatal Mortality Rate (per 1,000 live births)[3]
<24	272	33.2	408	262	10	985.3	1000.0
24	115	6.7	62	63	13	706.2	660.9
25	155	4.3	44	34	10	392.0	283.9
26	145	2.7	22	29	4	305.4	227.6
27	177	3.5	45	20	7	292.8	152.5
28	224	1.8	27	5	4	127.5	40.2
29	309	2.3	35	10	2	130.8	38.8
30	347	2.3	34	12	1	120.7	37.5
31	457	2.3	34	12	2	93.7	30.6
32	710	3.2	45	21	0	87.4	29.6
33	1024	2.7	41	11	3	48.8	13.7
34	1692	3.2	42	18	6	34.6	14.2
35	2634	2.7	36	17	2	19.9	7.2
36	5625	3.6	54	15	4	12.2	3.4
37	11065	4.3	50	25	14	6.7	3.5
38	27333	6.1	75	33	17	3.9	1.8
39	44694	5.8	81	23	14	2.3	0.8
40	61641	6.1	69	42	14	1.8	0.9
41	28588	2.4	26	16	8	1.5	0.8
42	3984	0.6	9	2	1	2.8	0.8
>42	119	0.0	1	0	0	8.3	0.0
Total	**191,310**	**100.0**	**1,240**	**670**	**136**	**9.9**	**4.2**

Sources: *Vital Statistics Annual Review 1994 - 1998, Alberta Vital Statistics - excluding livebirths live births < 24 weeks.

Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Total number of deaths = 2044.
2. Total Births = Live births + Stillbirths.
3. Perinatal and neonatal mortality rates are not corrected.

Table A63 Perinatal and Neonatal Mortality Rates by Maternal Age, Alberta, 1998

Maternal Age	Live Births*	% of Total Births[1]	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Perinatal Mortality Rate (PMR)[2]	PMR Corrected for Congenital Anomalies	Neonatal Mortality Rate (NMR)[3]	NMR Corrected for Congenital Anomalies	Mortality Rate[4]	Mortality Rate Corrected for Congenital Anomalies
≤17	884	2.4	5	4	0	10.1	7.9	4.5	2.3	10.1	7.9
18-29	21,205	56.4	109	49	13	7.4	5.3	2.9	1.6	8.0	5.5
30-39	14,841	39.5	80	50	12	8.7	6.0	4.2	2.2	9.5	6.3
≥35	5,020	13.4	34	25	6	11.7	6.6	6.2	2.2	12.9	7.0
≥39	670	1.8	6	2	0	11.8	4.5	3.0	1.5	11.8	4.5

Sources: *Number of live births for maternal age from Vital Statistics Annual Review, 1998; 22 births have no recorded maternal age.
Still Births and neonatal deaths as reported to Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Total Births = Live Births + Stillbirths (= 38,317 across all age groups).
2. Per 1,000 total births in each age group.
3. Per 1,000 live births in each age group.
4. ((Stillbirths + Neonatal Deaths) / Total Births in each age Group) x 1000.

Table A64 Perinatal and Neonatal Mortality Rates by Facility RHA, Alberta, 1998

Facility RHA	Total Births ≥500g[1]	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
1	2,096	1.0	1.4	1.0	15.2	9.7	0.1	0.5	4.7
2	1,248	2.4	3.2	0.8	10.5	6.8	0.2	0.3	4.1
3	560	0.0	3.6	3.6	14.4	9.8	0.4	0.4	2.0
4	12,242	4.0	6.0	2.8	17.9	12.2	0.5	1.4	7.6
5	366	5.5	10.9	8.2	15.6	8.2	0.3	0.3	1.4
6	2,325	1.7	1.7	0.0	18.8	11.8	0.0	0.1	5.1
7	838	2.4	3.6	2.4	20.3	10.9	0.0	0.1	1.7
8	436	4.6	4.6	0.0	11.3	9.0	0.0	0.0	9.9
9	577	1.7	1.7	0.0	7.1	3.5	0.2	0.2	2.4
10	12,214	3.4	6.5	3.9	18.9	12.4	0.7	1.5	8.1
11	535	0.0	0.0	0.0	9.9	6.4	0.0	0.2	1.3
12	1,123	1.8	3.6	1.8	15.7	10.2	0.1	0.1	2.4
13	1,295	2.3	2.3	0.0	6.8	4.6	0.2	0.4	3.9
14	342	2.9	2.9	0.0	22.8	14.9	0.0	0.0	0.9
15	394	5.1	5.1	0.0	13.2	8.7	0.0	0.0	2.8
16	650	6.2	6.2	1.5	20.2	13.5	0.0	0.2	3.4
17	409	7.3	14.7	9.9	7.1	4.6	0.7	0.7	4.7
Alberta	**37,650**	**3.2**	**5.2**	**2.6**	**17.0**	**11.2**	**0.4**	**1.0**	**6.4**

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths ≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths ≥500g) / Live Births ≥500g) x 1000.
5. (Total Caesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Caesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 1000g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

RHA boundaries are current as of 1998.

Table A65 Perinatal and Neonatal Mortality Rates by Level of Hospital, Alberta, 1998

Hospitals	Total Births ≥500g[1]	Stillbirth Rate ≥500g[2]	Perinatal Mortality Rate ≥500g[3]	Neonatal Mortality Rate ≥500g[4]	Total Cesarean Section Rate[5]	Primary Cesarean Section Rate[6]	Extremely Low Birth Weight %[7]	Very Low Birth Weight %[8]	Low Birth Weight %[9]
Level III									
Royal Alexandra/University of Alberta	4,596	6.1	12.0	7.7	21.8	14.3	1.7	3.5	14.2
Foothills	4,346	5.8	9.7	6.0	16.4	11.5	1.4	3.4	10.9
LEVEL III TOTAL	**8,942**	**5.9**	**11.0**	**6.9**	**19.2**	**12.9**	**1.5**	**3.4**	**12.6**
Level II									
Misericordia	2,579	3.5	5.4	2.3	15.2	9.7	0.1	0.3	4.7
Grey Nuns	3,525	0.6	1.4	1.1	19.1	13.0	0.1	0.3	5.2
Lougheed	3,849	2.3	3.1	0.8	18.3	12.2	0.1	0.3	7.2
Rockyview	4,047	3.5	4.4	1.2	19.0	12.9	0.1	0.2	4.4
Red Deer	1,728	1.7	1.7	0.0	21.4	13.6	0.0	0.1	6.0
Grande Prairie	1,075	2.8	2.8	0.0	7.4	5.0	0.1	0.4	4.2
Lethbridge Reg.	1,606	1.2	1.2	1.2	16.4	10.6	0.1	0.6	5.6
Medicine Hat	942	3.2	4.2	1.1	11.6	7.4	0.2	0.3	4.8
LEVEL II TOTAL	**19,351**	**2.3**	**3.2**	**1.1**	**17.4**	**11.5**	**0.1**	**0.3**	**5.4**
Level I									
North	7,426	2.8	3.9	1.5	14.4	9.0	0.1	0.1	2.8
South	1,931	1.0	3.1	2.6	12.6	8.1	0.3	0.3	1.8
LEVEL I TOTAL	**9,357**	**2.5**	**3.7**	**1.7**	**14.0**	**8.8**	**0.1**	**0.2**	**2.6**
TOTAL	**37,650**	**3.2**	**5.2**	**2.6**	**17.0**	**11.2**	**0.4**	**1.0**	**6.4**

Source: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Notes:
1. Out-of-hospital births excluded.
2. (Stillbirths ≥500g / Total Births ≥500g) x 1000.
3. ((Stillbirths ≥500g + Early Neonatal Deaths ≥500g) / Total Births ≥500g) x 1000.
4. ((Early + Late Neonatal Deaths ≥500g) / Live Births ≥500g) x 1000.
5. (Total Caesarean Sections / Total Mothers Delivered) x 100.
6. (Primary Caesarean Sections / Total Mothers Delivered) x 100.
7. (Live Births < 100.0g / All Live Births) x 100.
8. (Live Births < 1500g / All Live Births) x 100.
9. (Live Births < 2500g / All Live Births) x 100.

RHA boundaries are current as of 1998.

Table A66 Perinatal and Corrected (for Major Anomalies) Perinatal Mortality Rates by Facility RHAs, Alberta, 1998

Place of Birth	Total Births[1]	Total Births		Stillbirths				Early Neonatal Deaths				Perinatal Mortality Rate[2,3]		Corrected Perinatal Mortality Rate[4,5]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,098	2,096	2,094	2	2	0	0	1	0	0	0	1.4	1.0	1.4	1.0
2	1,254	1,248	1,247	3	3	0	0	1	0	0	0	3.2	2.4	3.2	2.4
3	562	560	559	0	0	0	0	2	1	0	0	3.6	1.8	3.6	1.8
4	12,289	12,242	12,171	49	32	13	5	24	16	13	10	6.0	3.9	3.8	2.7
5	366	366	365	2	2	0	0	2	1	1	1	10.9	8.2	8.2	5.5
6	2,329	2,325	2,325	4	4	0	0	0	0	0	0	1.7	1.7	1.7	1.7
7	838	838	838	2	2	0	0	1	1	0	0	3.6	3.6	3.6	3.6
8	438	436	436	2	2	0	0	0	0	0	0	4.6	4.6	4.6	4.6
9	578	577	577	1	1	0	0	0	0	0	0	1.7	1.7	1.7	1.7
10	12,260	12,214	12,129	42	25	9	3	38	20	19	14	6.5	3.7	4.3	2.3
11	536	535	535	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
12	1,125	1,123	1,122	2	2	0	0	2	2	0	0	3.6	3.6	3.6	3.6
13	1,302	1,295	1,294	3	3	0	0	0	0	0	0	2.3	2.3	2.3	2.3
14	342	342	342	1	1	0	0	0	0	0	0	2.9	2.9	2.9	2.9
15	394	394	394	2	2	0	0	0	0	0	0	5.1	5.1	5.1	5.1
16	650	650	650	4	4	0	0	0	0	0	0	6.2	6.2	6.2	6.2
17	412	409	406	3	2	0	0	3	1	1	1	14.7	7.4	12.2	4.9
Total Hospital Births	**37,773**	**37,650**	**37,484**	**122**	**87**	**22**	**8**	**74**	**42**	**34**	**26**	**5.2**	**3.4**	**3.7**	**2.5**
Out-of-Hospital Births	**379**	**375**	**371**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**5.3**	**2.7**	**5.3**	**2.7**
Alberta	**38,152**	**38,025**	**37,855**	**122**	**87**	**22**	**8**	**76**	**43**	**34**	**26**	**5.2**	**3.4**	**3.7**	**2.5**

Sources: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

*Out-of-hospital data from Vital Statistics Annual Review 1998, Alberta Vital Statistics plus Medical Records Departments of the hospitals.

Notes:

1. Weights were not recorded for 10 hospital births and 2 out-of-hospital births.
2. (Stillbirths≥500g + Early Neonatal Deaths≥500g) / Total Births ≥500g X 1000.
3. (Stillbirths≥1000g + Early Neonatal Deaths≥1000g) / Total Births ≥1000g X 1000.
4. (Stillbirths≥500g Corrected + Early Neonatal Deaths≥500g Corrected) / Total Births ≥500g Corrected X 1000.
5. (Stillbirths≥1000g Corrected + Early Neonatal Deaths≥1000g Corrected) / Total Births ≥1000g Corrected X 1000.

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 1998.

Table A67 Neonatal, Post-neonatal and Infant Mortality Rates, Alberta, 1985 - 1999

Year	Neonatal Deaths[1]	Post-Neonatal Deaths[2]	Infant Deaths[3]	Neonatal Mortality Rate (per 1,000 Live Births)	Post-Neonatal Mortality Rate (per 1,000 Live Births)	Infant Mortality Rate (per 1,000 Live Births)
85	202	142	344	4.7	3.3	7.9
86	214	172	386	4.9	4.0	8.9
87	179	132	311	4.3	3.2	7.5
88	183	157	340	4.4	3.8	8.2
89	180	139	319	4.2	3.2	7.4
90	215	123	338	5.0	2.9	7.9
91	145	138	283	3.4	3.3	6.7
92	194	105	299	4.7	2.5	7.2
93	157	105	262	3.9	2.6	6.6
94	185	105	290	4.7	2.7	7.3
95	187	80	267	4.9	2.1	6.9
96	150	81	231	4.0	2.2	6.2
97	128	51	179	3.5	1.4	4.9
98	129	74	203	3.4	2.0	5.4
99	141	77	218	3.7	2.0	5.8

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.

Notes:
1. Neonatal deaths refers to deaths of live born infants less than 28 full days after birth.
2. Post-neonatal deaths refers to deaths of children between 28 full days and one year of age.
3. Infant deaths refers to deaths of children under one year of age.

Data include Alberta residents only.

Table A68 Perinatal and Corrected (for Major Anomalies) Perinatal Mortality Rates by Facility RHAs, Alberta, 1998

Place of Birth	Live Births[1]	Live Births		Early Neonatal Deaths				Late Neonatal Deaths				Neonatal Mortality Rate[2,3]		Corrected Neonatal Mortality Rate[4,5]	
						Major Anomalies				Major Anomalies					
		≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g	≥500g	≥1000g
RHA Hospitals															
1	2,094	2,094	2,092	1	0	0	0	2	2	2	2	1.4	1.0	0.5	0.0
2	1,247	1,245	1,244	1	0	0	0	0	0	0	0	0.8	0.0	0.8	0.0
3	562	560	559	2	1	0	0	0	0	0	0	3.6	1.8	3.6	1.8
4	12,208	12,194	12,140	24	16	13	10	10	8	4	4	2.8	2.0	1.4	0.8
5	364	364	363	2	1	1	1	1	1	0	0	8.2	5.5	5.5	2.8
6	2,322	2,321	2,321	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
7	836	836	836	1	1	0	0	1	1	1	1	2.4	2.4	1.2	1.2
8	436	434	434	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
9	577	576	576	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
10	12,188	12,172	12,104	38	20	19	14	9	7	6	5	3.9	2.2	1.8	0.7
11	535	535	535	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
12	1,122	1,121	1,120	2	2	0	0	0	0	0	0	1.8	1.8	1.8	1.8
13	1,296	1,292	1,291	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
14	341	341	341	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
15	392	392	392	0	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0
16	646	646	646	0	0	0	0	1	1	0	0	1.5	1.5	1.5	1.5
17	407	406	404	3	1	1	1	1	1	1	1	9.9	5.0	4.9	0.0
TOTAL HOSPITAL BIRTHS	**37,573**	**37,529**	**37,398**	**74**	**42**	**34**	**26**	**25**	**21**	**14**	**13**	**2.6**	**1.7**	**1.4**	**0.6**
OUT-OF-HOSPITAL BIRTHS*	**379**	**375**	**371**	**2**	**1**	**0**	**0**	**1**	**1**	**1**	**1**	**8.0**	**5.4**	**5.3**	**2.7**
PROVINCIAL TOTAL	**37,952[6]**	**37,904**	**37,769**	**76**	**43**	**34**	**26**	**26**	**22**	**15**	**14**	**2.7**	**1.7**	**1.4**	**0.7**

Sources: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

*Out-of-hospital data from Vital Statistics Annual Review 1998, Alberta Vital Statistics plus Medical Records Departments of the hospitals.

Notes:

1. Weights were not recorded for 10 hospital births and 2 out-of-hospital births.
2. (Early Neonatal Deaths≥500g + Late Neonatal Deaths≥500g) / Live Births ≥500g X 1000.
3. (Early Neonatal Deaths≥1000g + Late Neonatal Deaths≥1000g) / Live Births ≥1000g X 1000.
4. (Early Neonatal Deaths≥500g Corrected + Late Neonatal Deaths≥500g Corrected) / Live Births ≥500g Corrected X 1000.
5. (Early Neonatal Deaths≥1000g Corrected + Late Neonatal Deaths≥1000g Corrected) / Live Births ≥1000g Corrected X 1000.
6. Vital Statistics Alberta reports 38,117 live births in Alberta in 1998 (37,619 of these to Alberta residents).

Corrected rates exclude deaths due to major anomalies.

RHA boundaries are current as of 1998.

Table A69 Neonatal, Post-neonatal and Infant Mortality Rates By Residence and Facility RHA, Alberta, 1997 - 1999 combined

RHA	Neonatal Deaths	Post-Neonatal Deaths	Infant Deaths	Live Births	Neonatal Mortality Rate (per 1,000 Live Births)	Post-Neonatal Mortality Rate (per 1,000 Live Births)	Infant Mortality Rate (per 1,000 Live Births)
Residence							
1	20	15	35	6,363	3.1	2.4	5.5
2	11	9	20	3,653	3.0	2.5	5.5
3	6	10	16	2,660	2.3	3.8	6.0
4	105	44	149	34,401	3.1	1.3	4.3
5	6	1	7	1,888	3.2	0.5	3.7
6	24	15	39	7,693	3.1	1.9	5.1
7	9	3	12	3,045	3.0	1.0	3.9
8	14	7	21	3,448	4.1	2.0	6.1
9	10	3	13	1,695	5.9	1.8	7.7
10	112	52	164	29,511	3.8	1.8	5.6
11	10	3	13	3,428	2.9	0.9	3.8
12	15	11	26	4,495	3.3	2.4	5.8
13	5	10	15	4,007	1.2	2.5	3.7
14	2	2	4	900	2.2	2.2	4.4
15	7	7	14	1,493	4.7	4.7	9.4
16	5	3	8	1,739	2.9	1.7	4.6
17	9	6	15	1,540	5.8	3.9	9.7
Unknown	28	1	29	4			
Alberta	**398**	**202**	**600**	**111,963**	**3.6**	**1.8**	**5.4**
Facility							
1	10	10	20	6,415	1.6	1.6	3.1
2	4	6	10	3,466	1.2	1.7	2.9
3	2	6	8	1,628	1.2	3.7	4.9
4	145	49	194	36,633	4.0	1.3	5.3
5	3	0	3	824	3.6	0.0	3.6
6	7	9	16	7,376	0.9	1.2	2.2
7	1	2	3	2,388	0.4	0.8	1.3
8	1	5	6	1,282	0.8	3.9	4.7
9	3	6	9	1,770	1.7	3.4	5.1
10	207	82	289	36,411	5.7	2.3	7.9
11	1	2	3	1,638	0.6	1.2	1.8
12	3	9	12	3,170	0.9	2.8	3.8
13	3	8	11	3,882	0.8	2.1	2.8
14	0	1	1	990	0.0	1.0	1.0
15	2	4	6	1,101	1.8	3.6	5.4
16	3	1	4	1,693	1.8	0.6	2.4
17	3	2	5	1,296	2.3	1.5	3.9
Alberta	**398**	**202**	**600**	**111,963**	**3.6**	**1.8**	**5.4**

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.

Notes: 1. Neonatal deaths refers to deaths of live born infants less than 28 full days after birth.
2. Post-neonatal deaths refers to deaths of children between 28 full days and one year of age.
3. Infant deaths refers to deaths of children under one year of age.
RHA boundaries are current as of 1998.
Data include Alberta Residents only.

Table A70 Perinatal and Late Neonatal Mortality by Cause of Death (Birth Weight ≥500g), Alberta, 1998

Cause of Death	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths	Total
Congenital Malformation	25	34	15	74
Prematurity	0	19	2	21
Unexplained	26	2	0	28
Antepartum/Intrapartum Hemorrhage	20	7	0	27
Maternal Disease/Maternal Premature Rupture of Membranes	9	0	0	9
Infection	5	6	2	13
Placental Insufficiency	13	0	0	13
Cord Accident	20	0	0	20
Asphyxia	0	5	0	5
Sudden Infant Death Syndrome	0	0	4	4
Circulatory (e.g,. fetomaternal hemorrhage, twin-to-twin transfusion)	2	3	1	6
Hydrops	2	0	0	2
Iatrogenic - leakage of lipid emulsion causing cardiac tamponade	0	0	2	2
Total	**122**	**76**	**26**	**224**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A71 Summary of Antepartum Deaths ≥2500 grams, Alberta, 1998

Cause of Death	Cases
Intrauterine Asphyxia - Cause Unknown	15
Nuchal cord/Knot/Occlusion	12
Placental Abruptio	7
Placental Insufficiency	6
Intrauterine Infection	1
Congenital Anomaly	2
Total	43

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A72 Causes of Death for Intrapartum and Neonatal Deaths ≥2500 grams (Excluding Congenital Anomalies), Alberta, 1998

Cause of death	Cases
Sudden Infant Death Syndrome	4
Asphyxia	
Breech	1
Cause undetermined	3
Delay in delivery	2
Group B Streptococci Infection, Septic Shock	2
Meconium Aspiration	1
Maternal Death	2
Newborn Abandoned	1
Total	16

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A73 Major Anomalies as Cause of Death, Alberta, 1998

Anomaly Classification	Stillbirths			Early Neonatal Deaths			Late Neonatal Deaths			Total[1]		
	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	<500g	500 - 999g	>999g	Stillbirths	Early Neonatal Deaths	Late Neonatal Deaths
Neural Tube Defects	4	3	0	2	1	2	0	0	0	7	5	0
Other Central Nervous System	1	1	1	0	0	0	0	0	0	3	0	0
Heart	2	0	1	0	1	4	0	0	6	3	5	6
Circulatory System	0	0	0	0	0	0	0	0	1	0	0	1
Respiratory System	0	1	1	0	1	0	0	0	2	2	1	2
Gastrointestinal System	0	0	1	0	0	0	0	0	0	1	0	0
Genital Organs	0	0	0	0	0	0	0	0	0	0	0	0
Urinary System	2	0	0	0	2	5	0	1	1	2	7	2
Musculoskeletal Deformity	0	1	0	1	1	4	0	0	1	1	6	1
Integument	0	0	0	0	0	0	0	0	0	0	0	0
Chromosomal	11	7	4	5	2	7	0	0	2	22	14	2
Other/Unspecified Congenital	4	3	1	3	0	4	0	0	1	8	7	1
Total	**24**	**16**	**9**	**11**	**8**	**26**	**0**	**1**	**14**	**49**	**45**	**15**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

1. Total deaths due to congenital anomalies = 109; total deaths (Stillbirth + Neonatal) = 334.

Table A74 Major Anomalies as Cause of Death, Alberta, 1994 - 1998

Anomaly Classification	94			95			96			97			98		
	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]	SB[1]	NND[2]	% of Total Deaths[3]
Neural Tube Defects/ Other Central Nervous System	14	12	5.6	11	14	5.5	8	9	4.3	15	7	5.5	10	5	4.5
Cardio-Respiratory	4	28	6.9	4	14	4.0	6	19	6.3	5	10	3.8	5	15	6.0
Gastrointestinal / Musculoskeletal / Integument	1	2	0.7	3	5	1.8	9	2	2.8	4	7	2.8	2	7	2.7
Genitourinary	6	5	2.4	3	3	1.3	9	3	3.0	8	4	3.0	2	9	3.3
Chromosomal	8	16	5.2	18	14	7.0	8	9	4.3	13	12	6.3	22	16	11.4
Other/Unspecified Congenital	15	12	5.9	12	13	5.5	11	5	4.0	7	6	3.3	8	8	4.8
Total	**48**	**75**	**26.7**	**51**	**63**	**25.1**	**51**	**47**	**24.6**	**52**	**46**	**24.5**	**49**	**60**	**32.8**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Notes:
1. SB = Stillbirths.
2. NND = Neonatal deaths (Early + Late).
3. Total (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths) for specific anomaly / Total deaths for that year (Stillbirths + Early Neonatal Deaths + Late Neonatal Deaths) x 100.

Table A75 Wiggelsworth Classification of Perinatal and Neonatal Deaths, Alberta, 1998

Group Classification	# of Babies
Group 1 - Deaths before the start of labour	96
<37 wks	68
>36 wks	28
<1000 grams	39
>999 grams	57
<2500 grams	68
>2499 grams	28
* one baby not weighed in this category	
Subgroup 1.1 - Abruptio	21
Group 2 - Lethal or potentially lethal malformation	107
Stillbirths	47
Neonatal Deaths	60
Subgroup 2.1 - Secondary malformation	5
Group 3 - Deaths associated with prematurity	74
Neonatal Deaths <37 wks	47
<1000 grams	70
<1000 gram Stillbirths - Intrapartum	27
<1000 grams Early Neonatal Deaths	42
<1000 grams Late Neonatal Deaths	1
Subgroup 3.1 - Extreme immaturity	69
* one baby not weighed in this category	
Group 4 - Intrapartum Deaths, neonatal deaths <4hrs. of age, neonatal deaths >1000g >4hrs of age with evidence of cerebral birth trauma/asphyxia.	12
Intrapartum Deaths	5
Neonatal Deaths <4hrs. of age	2
Neonatal Deaths >1000 gms >4hrs. of age cerebral birth trauma or asphyxia	5
Subgroup 4.1 - Massive antepartum hemorrhage/abruptio	3
Group 5 - Neonatal 37+ weeks gestation, stillbirths/neonatal death with defined specific conditions.	45
Antepartum deaths	24
Intrapartum deaths	2
Neonatal deaths	19
<1000 grams	10
>999 grams	35
<2500 grams	23
>2499 grams	22
Defined Specific Conditions:	
Cord accident/Cord anomaly	15
Inborn error of Metabolism	2
Twin to twin transfusion	5
Specific or unusual infection	4
Fetomaternal Bleed	1
Placental Pathology	0
Trauma - Maternal motor vehicle accident	1
Hydrops not associated with malformation	0
Unexpected, Unusual Finding:	
Unexplained death in term newborn	8
Sudden Infant Death Syndrome	4
Other - cardiac tamponade from total parenteral nutrition, disseminated intravascular coagulation, maternal cardiac arrest/death	5

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A76 Wiggelsworth Classification of Perinatal and Neonatal Deaths, Alberta, 1994 - 1998

Wiggelsworth Classification	94		95		96		97		98	
	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total	Cases	% of Total
Group 1 - Death before the start of labour.	149	32.5	120	26.5	111	27.8	106	26.5	96	28.7
Group 2 - Lethal or potential lethal malformation.	123	26.8	110	24.3	89	22.3	96	24.0	107	32.0
Group 3 - Deaths associated with prematurity.	87	19.0	109	24.1	119	29.8	107	26.8	74	22.2
Group 4 - Intrapartum Deaths, Neonatal Deaths <4hours old, Neonatal Deaths >1000grams & >4hours old with evidence of cerebral birth trauma/asphyxia.	43	9.4	14	3.1	25	6.3	19	4.8	12	3.6
Group 5 - Neonate 37+ weeks gestation, stillbirth/neonatal death with defined specific condition.	57	12.4	99	21.9	55	13.8	72	18.0	45	13.5
Total	**459**	**100.0**	**452**	**100.0**	**399**	**100.0**	**400**	**100.0**	**334**	**100.0**

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A77 Neonatal Deaths 37+ weeks Gestation, Stillbirths, and Neonatal Deaths with Defined Specific Conditions, Alberta, 1994 - 1998

Defined Specific Conditions/ Unusual Finding	94	95	96	97	98
Cord accident/Cord anomaly	18	37	11	32	15
Inborn error of Metabolism	1	0	0	1	2
Twin to twin transfusion	9	12	3	9	5
Specific or unusual infection	11	8	6	5	4
Fetomaternal Bleed	0	2	0	5	1
Placental Pathology	3	7	0	0	0
Trauma-motor vehicle accident	3	2	0	0	1
Hydrops not associated with malformation	1	5	1	3	0
Unexplained death in term newborn	0	11	11	11	8
Sudden Infant Death Syndrome	3	4	3	2	4
Other - bowel perforation, cardiomyopathy, severe maternal anemia, iatrogenic, persistent pulmonary hypertension, meconium aspiration, peritonitis/appendicitis, overlaying of sibling, maternal cardiac arrest, etc.	4	11	5	1	5

Source: Statistics reported to the Reproductive Care Committee by Medical Records Departments of the hospitals.

Table A78 Infant Deaths by Residence RHA and Facility RHA, Alberta, 1985 - 1999

RHA	Year														
	85	**86**	**87**	**88**	**89**	**90**	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**
Residence															
1	16	20	24	14	23	18	19	14	16	20	18	14	15	8	12
2	7	8	3	11	11	10	7	8	5	6	8	9	6	11	3
3	3	3	5	6	4	5	9	7	7	9	4	3	5	5	6
4	89	92	72	82	83	111	63	86	73	72	68	58	41	44	64
5	3	4	11	8	3	2	4	4	10	8	4	7	4	1	2
6	32	29	18	18	21	23	18	11	32	21	20	16	8	13	18
7	8	16	11	10	7	8	9	10	3	12	9	8	5	3	4
8	5	10	9	11	10	12	9	9	2	11	5	4	7	7	7
9	11	8	3	11	10	6	6	8	2	8	7	8	6	3	4
10	109	132	111	106	91	92	98	90	62	82	82	53	56	45	63
11	17	8	14	13	6	8	9	12	9	10	6	6	4	5	4
12	12	10	14	16	16	9	9	15	16	10	12	11	8	7	11
13	11	16	4	12	18	14	9	6	8	9	10	12	6	5	4
14	4	7	0	2	1	2	5	3	3	2	2	4	2	2	0
15	9	9	2	4	6	5	4	5	3	4	3	7	2	2	10
16	7	5	5	10	4	6	3	5	5	3	3	3	3	3	2
17	1	9	5	6	5	7	2	6	6	3	6	8	1	12	2
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	27	2
Alberta	**344**	**386**	**311**	**340**	**319**	**338**	**283**	**299**	**262**	**290**	**267**	**231**	**179**	**203**	**218**
Facility															
1	11	12	17	9	18	14	16	10	7	11	11	9	8	4	8
2	3	4	1	5	5	3	2	4	5	5	6	6	2	5	3
3	4	1	1	3	1	2	6	1	1	3	1	1	2	4	2
4	107	103	94	99	91	121	73	98	99	90	81	73	54	67	73
5	1	2	3	4	1	0	1	3	0	3	1	2	1	2	0
6	11	12	6	6	12	10	10	6	16	9	8	13	3	7	6
7	6	5	7	4	1	2	5	3	2	2	2	2	1	0	2
8	3	7	3	3	5	2	2	4	0	9	1	1	1	2	3
9	6	3	0	8	6	5	2	3	2	5	4	2	2	3	4
10	159	210	161	172	155	154	144	140	108	138	133	99	93	95	101
11	9	1	5	5	2	4	3	5	1	3	2	3	0	2	1
12	6	3	9	5	8	3	5	7	9	5	5	3	5	2	5
13	3	7	1	6	8	7	6	5	3	2	3	6	3	5	3
14	3	5	0	1	0	1	3	2	3	1	1	2	1	0	0
15	6	3	2	1	2	3	2	1	2	2	3	1	1	1	4
16	6	2	1	6	2	3	1	2	2	0	2	2	1	1	2
17	0	6	0	3	2	4	2	5	2	2	3	6	1	3	1
Alberta	**344**	**386**	**311**	**340**	**319**	**338**	**283**	**299**	**262**	**290**	**267**	**231**	**179**	**203**	**218**

Source: Vital Statistics, Death File, Department of Government Services, November 2000 release.

Notes: Infant deaths refers to deaths of children under one year of age.
RHA boundaries are current as of 1998.
Data include Alberta residents only.

Table A79 Infant Mortality Rates by Gender, Alberta, 1985 - 1999

	Infant Mortalities[1]		Live Births		Infant Mortality Rate[2]	
Year	Female	Male	Female	Male	Female	Male
85	148	195	21,104	22,222	7.0	8.8
86	162	224	21,142	22,181	7.7	10.1
87	135	176	20,215	21,507	6.7	8.2
88	142	198	20,544	21,139	6.9	9.4
89	128	190	21,038	21,946	6.1	8.7
90	144	194	20,655	21,979	7.0	8.8
91	129	154	20,757	21,614	6.2	7.1
92	140	159	20,396	21,277	6.9	7.5
93	117	144	19,432	20,473	6.0	7.0
94	123	167	19,110	20,349	6.4	8.2
95	117	150	18,854	19,675	6.2	7.6
96	99	132	18,070	19,406	5.5	6.8
97	76	103	17,802	18,749	4.3	5.5
98	84	119	18,284	19,330	4.6	6.2
99	101	117	18,558	19,239	5.4	6.1

Sources: Vital Statistics, Birth File, Department of Government Services, October 2000 release.
Vital Statistics, Death File, Department of Government Services, November 2000 release.

Notes: 1. Infant deaths refers to deaths of children under one year of age.
2. Rate per 1,000 live births.
Date include Alberta residents only.

Table A80 Maternal Mortality Totals and Rates, Alberta, 1961 - 1998

	Maternal Deaths				Rates[1]	
Year[2]	Total	Direct	Indirect	Unrelated	Overall	Direct
61-65	18	8	4	6	4.9	2.2
66-70	11	4	2	5	3.6	1.3
71-75	10	3	1	6	3.3	1.0
76-80	6	1	2	3	1.7	0.3
81-85	7	2	2	3	1.6	0.5
86-90	8	2	1	5	1.9	0.5
91-95	5	2	2	1	1.2	0.5
96	6	2	2	2	1.6	0.5
97	1	1	0	0	0.3	0.3
98	3	1	2	0	0.8	0.3

Sources: Statistics reported to the Committee on Reproductive Care by Medical Records Departments of the hospitals.

Vital Statistics Annual Review 1998, Alberta Vital Statistics.

Notes:

1. Rates are per 10,000 live births.
2. All figures (except 1996 to 1998) are for the five year period combined.